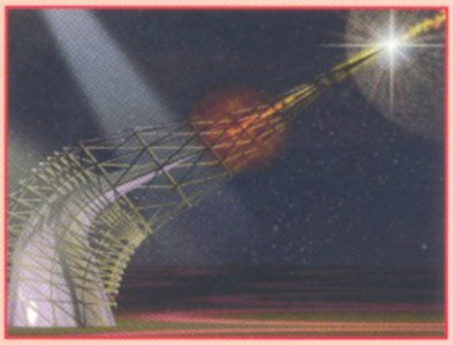
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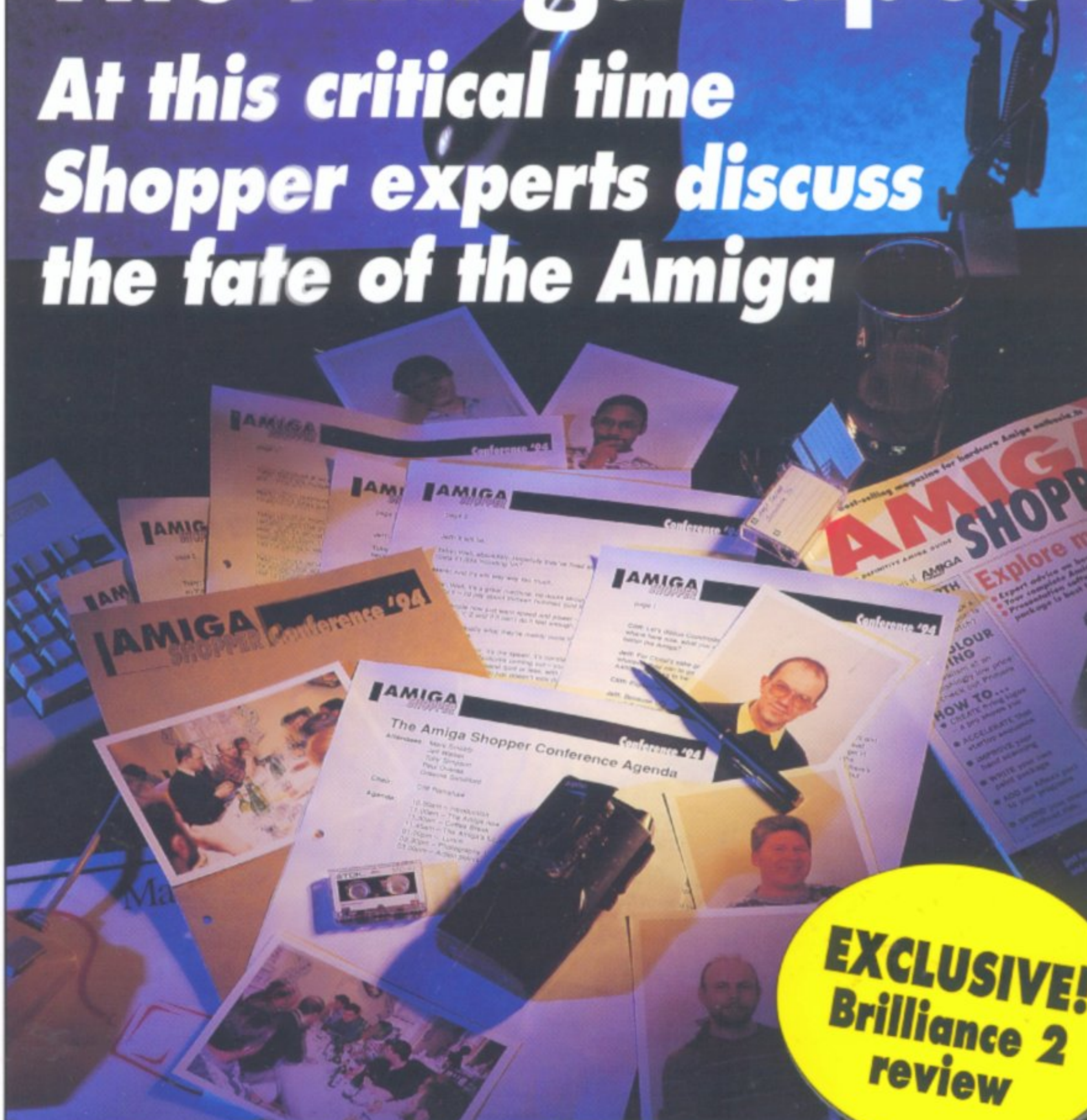
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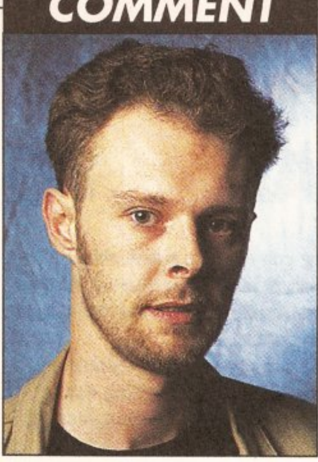
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AMIGA SHOPPER
ISSUE 38 • JUNE 1994

IN THIS ISSUE

COMMENT



Cliff Ramshaw ponders over the month's Amiga events...

They may not be fairing as well as they might on the stock market, but Commodore are certainly doing plenty to further the cause of the Amiga.

What with the surprise announcement of the A1200 CD-ROM drive, the A4000T's launch, the Amiga Centres of Excellence and the Seal Of Approval scheme, the Amiga scene hasn't been moving so quickly for ages. Commodore UK are definitely getting their act together.

Developers too are still firmly behind the machine: the imminent launch of *PageStream 3* from Soft-Logik in particular looks likely to be tremendous, taking the Amiga to new heights of productivity. It must be said – whatever happens to Commodore, the Amiga itself will keep on going for an awfully long time yet.

Again, thanks for all your feedback. Keep it coming – the more we hear, the more we can improve.

Back to roots

***Origins 2* is a family-tree database from The Puzzle Factory, capable of storing information on over six million individuals.**

It handles multiple marriages, set of children, unmarried parents and so on, and will generate a multitude of report types.

ARexx support is included, along with the ability to link into an editor to write textual notes, and to display related illustrations.

Origins 2 costs £75 from Helios Software ☎ 0623 554828.

Primera source

We'd like to point out that the Primera printer can also be obtained from Bannerbridge plc (☎ 0268 419101) for £763.76, or £934.13 with the dye-sublimation option included.

COMMODORE SHOW CD-ROM DRIVE FOR A1200 AT HANOVER

Commodore surprised everyone at the recent CeBIT show in Hanover, Germany with the unveiling of their dedicated CD-ROM drive for the A1200. Don Maple brings you the details.

The release of a CD-32 compatible CD-ROM drive for the A1200 has been seen for some time as a move Commodore must make. Rumours have been rife that it just wasn't technically possible that Commodore couldn't afford to develop, or that the project had been delayed. Yet Commodore came up trumps and scotched them all, at the last minute flying in a prototype model from the States.

It's the eighteenth time that Commodore have exhibited at the prestigious CeBIT show, once again taking the opportunity to introduce new products. This time, though, they are operating under a new policing of only showing products whose releases are imminent, in an effort to squash rumour mongering. Commodore Germany expect to have the A1200 CD-ROM drive in the shops by May. Commodore UK, however, are aiming for a more conservative September release date.

The German sale price is expected to be DM 500, which translates to a UK price tag of £199. Often in the past Commodore kit has been much cheaper than in the UK, but thanks to new European Union regulations liberalising trade, this is now unlikely since you can order one from Germany just as easily as from within the UK.

The unit has been designed specifically to attach to the Amiga 1200, of which 115,000 have been sold in Germany alone. Called "the CD32 expansion for the A1200," it is actually the CD-ROM half of the CD32. It possesses the same shape, but is colour-matched to the A1200's beige.

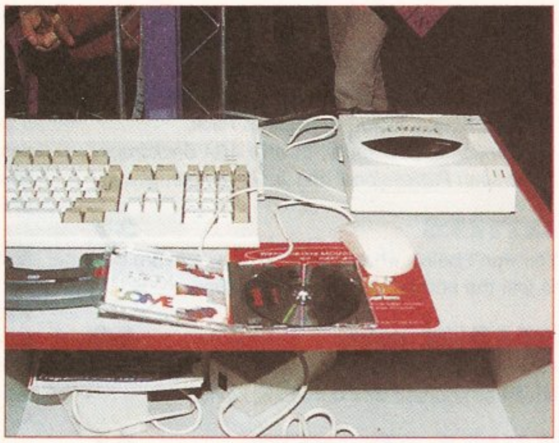
The technical specifications are identical to those of the CD32. It has a multisession drive capable of double-speed access. It's capable of reading all three CD types: music, data and Kodak Photo-CD. It also contains the CD32's special custom chip, Akiko. This is the chip that converts pixels between planar (as used with the Amiga's bitplane system) and chunky (a method of storing screen information which is much faster for games). Also on the board is a SIMM memory socket, into which 4Mb of RAM can be plugged.

The CD-ROM comes in a stand-alone box, and is powered by its own brick power supply. It connects to the A1200 through the trapdoor expansion port, using a proprietary interface designed by Commodore. It's a 32-bit wide interface which interfaces with the CPU without any speed penalty. The cable attached to the interface exits the A1200 behind the floppy drive and connects directly to the CD-ROM.

Of course, the use of the trapdoor slot gives rise to the question: what happens to A1200 turbo cards and other expansions? The answer, unfortunately, is not quite clear cut. The RAM can be expanded by adding a SIMM on the board. If you need more, say Commodore, you should be using an A4000. There doesn't seem to be any way of using any of the other expansion cards. It's feasible, though, that a third party could come to the rescue with a thru-port connector, but space in the already cramped expansion slot may present problems.

The last hardware hurdle, the MPEG Full Motion Video module, seems to be too high to overcome at this point. There appears to be no way of connecting it to the A1200 since the expansion slot is already occupied. This means that Video CDs on the A1200 may not be feasible at this time, although with the miniaturisation of components a constant factor, it might be possible to integrate the MPEG module on future A1200 models.

At the show, the A1200 connected to the CD-ROM drive was running an earlier version of AmigaDOS 3.1. Although the new operating system is not yet finalised, it does have the CDFileSystem which means that, in theory at least, it can access both CDTV and CD32 drives.



CD-ROM heaven for A1200 owners in the form of Commodore's brand new drive, expected to be sub-£200.

The software compatibility of the drive seems to be high. CD32 games do, by and large, run on the A1200 with the drive. The only exceptions are some games that object to RAM expansions in the PCMCIA slot. If such a card is removed, the games run fine. Probable causes for this could be a system bus contention, a bus overload or – since only a few games are affected – perhaps a simple memory map conflict. This does not apply to all games, which suggest a simple software fix will be forthcoming.

The news isn't so good for A4000 owners. The only option is a CD-ROM interface on a card. But this card would have to have the Akiko chip on it, which would need to sit on the chip bus. This is not possible with a Zorro card, so it would need to be a CPU module. Unfortunately, there would also need to be a video signal passed, which means the card would need to plug into a Zorro video slot. Suffice to say that it's something of a dilemma which is not easily solved.

Commodore's advice is simply to get a CD32 as an external device and connect it to the A4000 using one of the newly available serial interfaces (see the story on page 3 for details of CD32's new price).

Financial troubles still plague Commodore

Commodore International have announced further losses for the financial quarter ending 31st December. The company reported a $8.2 million loss on sales of $70.1 million. This compares with losses of $77.2 million on sales of $237.7 million in the same quarter of the previous year.

Commodore are currently trying to negotiate a restructuring with their creditors. They put the loss down to financial constraints which hindered their supply of products and therefore reduced sales.

They claim poor sales for the CD32 in Europe, despite its accounting for 46% share of CD software sales in the UK. The A1200 fared somewhat better – 95% of home computers sold are A1200s.

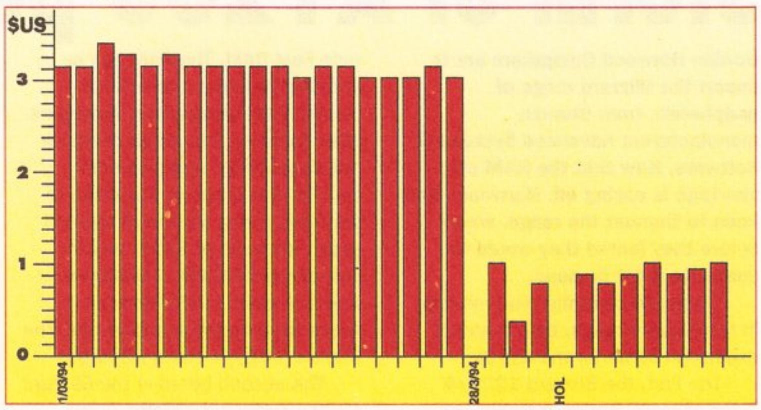
Marked fluctuations in Commodore's share prices on the stock market followed the announcement. Share dealing was actually suspended for one day, on 28th March, after the price had fallen to $3. Dealing opened again on the 29th at a price of $1 per share. The price dropped to 37.5 cents – the lowest all year on 30th March. This compares with the highest price during the year of $5 a share.

At the time of going to press, the price was climbing to (and will hopefully continue beyond) $1.

At a recent press conference at the European Computer Trade Show in London, Commodore UK joint managing director David Pleasance emphasised to journalists the fact that the losses were much lower than those of the equivalent quarter last year.

He announced the new initiatives Commodore were taking – the launch of the Amiga Centres Of Excellence and the Seal Of Approval for Amiga peripherals (see story below), the new, ultra-low price CD32 bundle (see story on page 6) and the A1200 CD-ROM drive – and remained optimistic for the future. Whatever the fate of Commodore, he assured his audience, the Amiga is a strong enough platform to survive.

Rumours of an imminent buy-out abounded at the show. The names coming up most frequently were Hewlett Packard, Philips, Sony and Time Warner. Peasance refused to be drawn.



The changing fate of Commodore International's financial fortunes over March and the beginning of April. Share trading was suspended on 28th March.

COMMODORE HELPLINE AUTOMATED

The efficiency of the Commodore technical helpline, provided by service contractors ICL, has been improved by the addition of an Interactive Voice Response system.

The system was introduced in December to help ICL cope with the flood of calls over the Christmas period. Over 13,288 calls – roughly one third of those received had been handled by the system by the end of January. Calls range from dealers asking how to correct a fault, to first-time users asking how to plug their machine in.

The system works by asking the caller a chain of questions. The responses direct the caller to the relevant solution. Happily, the opportunity is there at any point to divert to a human operator.

This system should result in ICL's engineers being able to get out to customers who need them more quickly.

Flurry of announcements at European Computer Trade Show

On 10th April at the recent European Computer Trade Show, there was much to see in the Commodore UK suite.

On show was the prototype CD-ROM drive for the A1200, as previously exhibited at the CeBIT show in Hanover (see story opposite). Just as exciting, though, was the arrival of the Amiga 4000 Tower, acclaimed by Commodore as their most advanced Amiga ever produced. It comes with the AGA chipset, of course, 6Mb RAM, and is powered by a Motorola 68LC040 25MHz processor.

Built in is a SCSI-II interface, suitable for extremely fast hard drives and the like. It will support up to seven SCSI devices, internally or externally.Five expansion bays are included in the case. The A4000T costs £1,949.99, excluding a hard drive (the philosophy being users can pick one to suit).

The Video Toaster professional-level effects unit was also on show, being used in conjunction with a PAL Amiga. The device that made this magic possible is the Prime Image Passport 4000 converter system – an enhanced version of the Time Base Corrector reviewed in issue 33. With it, Commodore hope to mirror their success in the States by "propelling the Amiga towards domination of the TV special effects market."

The second Amiga Centre of Excellence was announced, this one being run by Premier Vision and based in central London. ACE centres are dedicated to providing tailor-made multimedia packages for clients.

As mentioned last month, Commodore unveiled its Seal Of Approval scheme, whereby manufacturers can send their products in to Commodore for testing in the UK and US. Those that are found to be reliable and work as claimed will be given a Seal Of Approval, which should give buyers "a guarantee of quality for the best peripherals and software."

Lastly, the A1200 Computer Combat/Innovations pack was launched. The £349.99 bundle consists of an A1200, *Wordworth 2, Digita Print Manager, Day By Day, Personal Paint 4* and three games.

Amiga under the spotlight

Spotlight 1994, a show for Amiga and Atari ST enthusiasts, is to be held at the Novotel Hotel, Hammersmith, London, on the 28th and 29th May.

Exhibitors include Power Computing, Golden Image (UK), Meridian Software, Alfa Data Benelux, 16/32, Gasteiner, First Computer Centre, HiSoft and Amiga Computing.

Tickets are £5 on the door or £3.50 in advance. Call ☎ 081 345 6573 to order.

Effective show for animators

The London Effects and Animation Festival will make its début this November.

Aimed at people involved in computer-generated animation and special effects, the show will consist of two parts: an awards ceremony for the best use of computer generated animation and effects from around the world, taking place at the Odeon, West End on 7th November, and a programme of talks and screenings at Wembley Exhibition and Conference Centre from 8th to 10th November. Call ☎ 081 995 3632 for more details.

On-line help

Have all the information you need at your finger tips with the aid of the *Amiga On-Line Reference Manual 2* from Area 52.

It is a collection of *AmigaGuide* documents that can be called up from your machine to supply answers to over 500 frequently asked questions, as well as providing in-depth info on the Workbench, AmigaDOS, ARexx and the Amiga product range. A glossary is also included. *AORM* is available for £17.99 from First Computer Centre ☎ 0532 319444.

Treble power for Music Shop

Upgrade your One Stop Music Shop soundcard and treble its number of addressable MIDI channels with the Triple Play Plus hardware and software upgrade.

Blue Ribbon Soundworks are selling it for £169.95.

Also from the company comes version 2.5 of their sequencer *Bars&Pipes Professional*, with improved notation printing. It costs £299.95. Call Meridian ☎ 081 543 3500 for upgrade details.

CD-ROM mag

CD Gold is a new, bi-monthly magazine, all held completely on CD-ROM, for the CD32, CDTV and any Amiga with a CD drive.

It costs £9.95 per issue, and contains reviews, PD, game demos, interviews and music. Get yours from CD Gold, 67 Turner Rd, Walthamstow, London E17 3JG.

JPEG on the fly

***Pegger*, from Heifner Communications is a program that sits in the background, automatically encoding and decoding JPEG images.**

With it, you can now use JPEG images with graphics programs that don't ordinarily support the format. It costs £99.95 and is distributed in the UK by Meridian ☎ 081 543 3500.

24 pin Fujitsu

The DL3800 24-pin printer is the latest addition to Fujitsu's dot-matrix range.

Distinguishing the DL3800 is its ability to handle paper up to A3 in size and 0.4mm in thickness, making it suitable for printing up to five carbon copies at one time, along with an original.

It has a 128K buffer, a letter quality speed of 120 cps, a 360x360 resolution, and eight resident scalable fonts. It supports IBM Proprinter XL24E and Epson ESC/P2 emulations, and costs £786. Fujitsu ☎ 081 813 7371.

Directory help

***DirWork 2* from Quasar is a directory utility that the company claim to be the "most versatile and configurable utility" for the Amiga.**

Its features include instant recognition of file types, a virus checker, sound playback, text and picture viewing, and fully configurable gadgets. It is distributed in the UK by Meridian ☎ 081 543 3500. A UK price has yet to be announced.

Future proof Supra modem

The new SupraFAXModem 288 is based around the Rockwell V.Fast .Class chipset, and will transfer data at up to 28,800 bps and faxes at 14,400 bps.

With the addition of a simple upgrade from Supra it will be compatible with the forthcoming V.34 standard. The modem is available for £284.99 from First Computer Centre ☎ 0532 319444.

CD32 BUNDLE PRICE SLASHED

Only a month after announcing their latest CD32 bundle, ready for the summer, Commodore slashed its price from £299.99 to just £249.99.

The move comes amid the company's shaky financial fortunes, but should certainly help them make some money. As well as appealing to the prospective console junkie, it looks like pretty good value to the Amiga owner looking for a CD-ROM drive. With a suitable lead and software it can be hooked up to an Amiga to act as an external drive, while stand-alone models are currently selling around the £200 mark. Owning a CD32 would, of course, give you access to CD-based games and, with the addition of an FMV module, video CDs.

The bundle, called *Spectacular Voyage*, includes six games: *Microcosm, The Chaos Engine, Diggers, Oscar, Dangerous Streets* and *Wing Commander.*

Commodore ☎ 0628 770088.



***Spectacular Voyage* is Commodore's latest CD32 bundle. At £24.99, it should sell spectacularly (sorry).**

Storm of A1200 peripherals

Gordon Harwood Computers are to import the Blizzard range of peripherals, from German manufacturers Advanced Systems & Software. Now that the RAM chip shortage is easing off, Harwoods are keen to trumpet the range, where before they feared they would be unable to meet demand.

There are currently two products in the Blizzard range, both trapdoor expansion cards for the A1200.

The first, the Blizzard 1220/4 Turbo Memory Board, provided the user with an additional 4Mb of 32-bit wide Fast RAM. The RAM can be switched in and out to provide compatibility with games. Among its other features, the board boasts a "clock-doubling" feature which doubles the speed of accesses to the RAM, giving an overall claimed speed increase of 300% over an unexpanded A1200. A battery-back real-time clock is provided, as is space for a maths co-processor. The Blizzard 1220/4 costs £219.95.

The second board is the Blizzard 1230-II Turbo Accelerator. Two configurations are available: one with a 40MHz 68EC030, the other with a 50MHz 68030 and Memory Management Unit. Both include two SIMM sockets, each capable of holding a 1, 2, 4, 16 or 32Mb RAM chip. A battery-backed real-time clock is supplied, as is a maths co-processor socket, a DMA port for the fitting of an optional SCSI-II controller and a further connector for future expansions. The 40MHz model costs £244.95, with the 50MHz one costing £329.95.

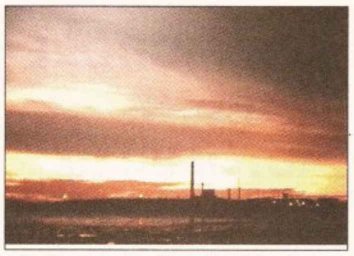
Call Gordon Harwood Computers ☎ 0773 836781.

Goodies from Visual Promotions

Visual Promotions is a new company aiming to provide a range of "exciting products and services".

For £5.95 it is selling the book *Beginning in DTP*, by David Cryer, which covers software choices, font and graphics use, and page design. The company also provides a T-shirt printing service for £6.95 per shirt.

Finally, for £5.95 you can get the first in the *Visual's* photo-realistic image collection – three disks containing landscape and sunset images. Choose from HAM, HAM-8, 12-bit, 24-bit, BMP and TIF formats. Visual Promotions ☎ 0303 245378.



Images from Visual Promotions.

MEDIAPOINT UPGRADED

***MediaPoint*, the multimedia authoring package from Activa (see review in last month's issue) reached release 127 (*!*) at the recent CeBIT show.**

Among the £329.99 package's enhancements are: genlock control, support for release 3 of the SunRize Studio 16 sound editing software, support for the Toccata audio card and fast colour thumbnails.

The Page Editor now supports dithering, palette optimisation, text antialiasing, bar graphics... the list goes on. The Player supports a wider range of monitors, overscan, 24-bit previews and includes new transitions. Activa International are on ☎ 071 371 5241.

SMART MAIL ORDER BUYING

We're discovering that one or two of you are still not buying by mail order as smartly as you could. For your own piece of mind, here are a few pointers that you should always follow:

- *Never* send cash or postal orders through the post.
- *Send* a cheque if you must, but even better...
- *Use* your credit card. If the price of your order is over £100 and there's a problem, you may be able to claim back from the credit card company.
- *Keep* notes. Make a note of the page and issue of *Amiga Shopper* of the advert you're ordering from, the date you're ordering; the name of anyone you speak to over the phone; and details of any promises made by the company you're dealing with.

In the unlikely event you have a problem that you cannot resolve with the company concerned, please write to Anna Masters, Amiga Shopper Mail Order Queries, Future Publishing, 30 Monmouth Street, Bath BA1 2BW. Please include in your letter all the information listed in the final point above, and make a copy of your letter for future reference.

Note that for legal and technical reasons we cannot deal with any advertising queries about companies advertising in *Amiga Shopper* except in writing. See page 96 for more tips on smarter mail order buying.

STATESIDE SNIPPETS

R Shamms Mortier, our man across the pond, brings you the latest news and developments from the hotbed of Amiga activity.

There's been a resurgence of optimism throughout the last two months that the Amiga is well able to stand its own amongst the multitude. Everyone is waiting to see what Commodore is up to with the planned release of the A5000 series.

My take on it is that the development of the CD-32 has actually given Commodore some engineering knowledge that will find its way into the A5000s in some manner. CD-32 developers sure have been kept busier as a result, and some of these same folks may be developing magic wares for the new Amiga. It's an exciting time.

SINGLING ALONG

There is an item that's becoming a hot choice for Amiga animators in the States. This is the Sanyo GVR-S950 S-VHS video recorder. The neat thing about this system is that it has an on board single frame recorder. The Sanyo deck sells for a price that almost throws a single frame unit in for free.

You can address the Sanyo directly from within *Imagine* and *LightWave* (also *LightRave* for PAL users). It is definitely high end industrial quality, offering two audio tracks in and one out, and VHS as well as S-VHS insert and assemble editing controls. The pull down controls on the front of the recorder look like the deck of the Starship Enterprise, chock full of switches and gadgets for fine tuning the tape settings. The Sanyo GVR S-950 costs about $2,500, and is a great addition to the Amiga videographics workplace. An Amiga driver on disk comes with it, and the serial port installation hardware is free. The Sanyo now occupies a prestigious place in my Amiga studio. (Sanyo ☎ 0101 800 421 5013)

MORE OF MACROSYSTEMS

Any day now I hope to test out the Retina III board from MacroSystems. It's built upon the already popular Retina II, except that this one is Zorro III (Amiga 3000/4000) intended. Faster rendering and expanded screen modes are some of the promised features. Software enhancements are also promised, as well as an eventual new paint package. Their Toccata board is starting to make a mark with serious Amiga 16-bit sound/sample users, mainly because of its very low price (around $500) and its high quality. I connect it with the outputs of the BlueRibbon Soundworks' One-Stop-Music-Shop to edit and playback scores for recording. Expect more advances in the Toccata software by the Spring, as well as a boatload of new wonders from MacroSystems. Look for MacroSystems to be a rising star in the visual and audio end of the Amiga professional market, as well as a player in non-professional applications. (MacroSystems ☎ 0101 810 347 6266).



The Sanyo GVR S-950, with its single frame feature – a valuable boon to the animator's studio.

FINAL WRITER 2

Here it comes – another update of the marvellous word processor from Softwood: *Final Writer 2*. The first release was already far advanced over their *Final Copy* package, and this one has even more features. As a dedicated *Final Writer* user, my $25 fee is already in the mail. I called Woody Williams, the chief executive officer of Softwood, and asked him to tell me what most excited him about this release. His response? He said that the "movable pallets were nice" but it was really the new Undo/Redo function and the ability to get instant Bold/Underline/Italic styles at a mouse click that were most admirable, as both of these attributes were the ones most asked for by users since *Final Copy* days. He also confided that "Commodore was always on my back about putting this stuff in, so now it's in".

I asked Mr. Williams about his reflections on the Amiga market in general. "What I've decided to do," he replied "is to stick with the Amiga and keep enhancing the software. If I would have jumped ship, it would have been last year when Commodore laid off all those folks. I don't really care what Commodore does or doesn't do as far as our software is concerned. We have a lot of users, and we keep making things better!". By the way, I found out that Softwood is already working hard on the release of *Final Writer 3.0*. Look for data base support as well as a spreadsheet in the Fall of '94. (Softwood ☎ 0101 800 247 8330).

NEWTEK NEWS

StarTrek fans should take notice of the coming special effects shots of the Enterprise in the popular TV series as it hits the airwaves this Autumn. Several of the Amiga animators from the *Sea Quest* series are working on replacing the solid models of ships that are used now with Amiga-generated 3D ships. The assets are obvious. A computer generated spaceship can be the subject of a lot more manipulations and effects than a solid model. Also on the NewTek newsfront, news about the Screamer (NewTek's processing engine for their *LightWave 3D* rendering software). The Screamer has stopped screaming. It turns out that it never reached its promised speed, and also required an investment much above the suggested $10,000 to do anything at all worthwhile.

Undaunted by all of this, however, NewTek have released a new system called the Raptor that promises to do what the Screamer couldn't,.at a more realistic $15,000 (a starting price for a box with two R4400 RISC based rendering engines). They are also in the process of marketing a new non-linear editing package in the hopes of diversifying their product line (perhaps the astounding success of the LightRave emulator has shocked them into enhanced action). What we also need to see from NewTek is an upgrade to the impoverished *ToasterPaint* software. (NewTek ☎ 0101 800 843 8934).

NEXT BUZZ IN 3D PROGS

Real-3D started the craze; a particle system with associated gravity well controls and other options. Now, MacroSystems *Sparks* is joining the battle. A fully fledged particle animation system with advanced kinematic controls for *LightWave*, this new MacroSystems product sees the light of day in about a month.

Not to be in any way outdone, *Aladdin 4D* developer Greg Gorby has just released a new tool called *Fountain*. It may be the most awesome particle animation system of all. Like *Aladdin's* flares, the particles can be targeted with any IFF brush or picture you desire, including animations. Waterfalls, fire, space ship exhaust, swirling curved shapes and dozens of other effects are now possible. All of the particles can have wind/gravity components, so they move very realistically.

ADSPEC are including *Fountain* as a free upgrade to registered users of *Aladdin 4D 3.0*, though nothing like it exists on any other platform and it could easily sell as a $500 stand-alone module. Rendering is fast and accurate, though a learning curve is expected before the system becomes second nature. I expect a copy of MacroSystems' Sparks soon, and I'm anxious to compare the results and the feel with the *Aladdin 4D* Fountain (see review on page 20). (ADSPEC ☎ 0101 216 337 1329).

AWESOME NEW IMAGE MANIPULATION

Image Mirror – remember the name, because you'll be hearing a lot more about it in the coming months. It's the title of a Seven Seas package that is due to hit the streets by the time this article goes to print. *Image Mirror* relates to the strange mirrors in a carnival fun house, and is built upon the foundation created by another Seven Seas



This picture demonstrates Aladdin's Fountain particle system, as well as gas and flare effects.

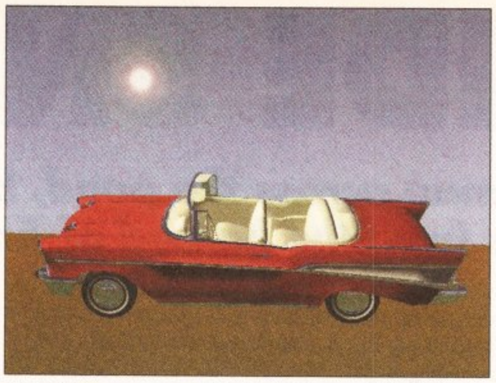
package, *MathVision*. Well, the latest Seven Seas package enables the Amiga user to apply all of that math and more to any imported IFF picture file (including ANIM single frames). It also sports a completely redesigned user interface, making the math part of the operations hidden beneath easy to use graphic buttons and controls. The video world is always hungry for an expanded effects palette, and *Image Mirror* should satiate the experimental multitudes for some time to come. (Seven Seas ☎ 0101 206 385 1956).

IMAGINE ALIVE AND WELL

There is no developer that I can think of that has the capacity to speak as directly as does Mike Halverson, the energetic captain of Impulse. Impulse known mostly for its release of the 3D/4D modelling and animation software *Imagine*.

We spoke a bit about *Imagine 3.0*. Mike was very excited about the "Bones" feature – ways to make connected parts of a 3D object move more organically. He reckoned that *Imagine*'s Bones are "sexy and easy to use". He described an animated mouse he created that could wiggle all part as needed, including the shaping of its mouth for "speaking". Hot stuff.

Mike's quips and acerbic comments are known throughout the industry.. Here's a sample: "The *truth* in the computer industry is the most ghosted out item on the menu... I haven't looked at *LightWave* in two years, they are a niche market... at Impulse, we feel like Tonya Harding. We're not a pretty girl, we're more woodsy and sexy. We don't have time for the society ball."



A '57 Chevy rendered in LightWave, with the help of the LightRave emulator.

What interested me most in our conversation, however, was the hardware items Impulse are developing for the computer graphics market. This stuff made me drool all over the telephone:

•Magic Wand – this is a connected piece of hardware meant to be moved in real 3D space. As you move it, a path is described on the computer screen that acts as a movement parameter against which your objects can be animated. It should be out by the summer for under $200.

•3D Digitizer – Mike describes this as "a rotisserie and grill" affair. It comes as a kit that you will have to bolt together. The planned cost will be under $500! Release date is expected before June '94.

•Colour Picker – another wand affair that enables you to "pick" a computer painting colour from any real world object or surface. Summer of '94 for under $100.

•StickMan – this is the fanciest of all, though projected release date thus far is Christmas of '94. Mike describes it as "parts with variable resistors" that can be snapped together. The parts would mimic hierarchies of 3D objects, and would be read directly on to the computer screen. Movement of the parts would produce keyframes, so that the artist would be working much more organically. Projected price is under $500. (Impulse ☎ 0101 612 425 0557).

FOR LIGHTRAVE PAL USERS

A new version of LightRave (3.1 from Warm & Fuzzy Logic), the LightWave emulator, is now available for LightRave PAL users. This version of the controversial NewTek emulator now renders in the correct PAL format size, including the correct size for DPS Animation Recorder users. Resolutions for renders can be up to 4000x4000. A series of new ToolTypes have been added to the LightRave file (for 3.1 only), which are: "FORCEAGA", forcing the renders to be in 8 colours for non-AGA Amigas; "KILLAGA", the opposite of the former; "EGS" for rendering to EGS boards; "WIDTH=X" sets the width of the render screen from 16 to 1020; "HEIGHT=X" sets the height of the render screen from 16 to 1020. Width and Height are used as a reference for the higher *LightWave* print resolutions, allowing these to be maxed at up to 4000 x 4000.

Perspective – Amiga

The column where key industry figures air their views on a topic they consider of vital importance to the Amiga community. This month, Commodore UK supremo discusses the Amiga's role in multimedia.

In technological terms we are entering into an incredible world of low-cost, awesomely powerful, easy-to-use products, offering an amazing array of commercial opportunities.

What is this beast? Full Motion Video, that's what.

Only a matter of months ago, it took a high-spec 486 PC, stuffed to the gunnels with sound cards and graphics cards linked to a CD-ROM drive, and what's more taking up half a room in the process. All of this just to deliver a multimedia message of mediocre quality to say the least.



Commodore UK's joint managing director, David Pleasance introducing new initiatives, tells Amiga owners– "Thanks for your loyalty."

With the average price of that sort of configuration reaching £1,600 it's no wonder that the multimedia market has been slow.

But now, for only £499 the CD32 plus Full Motion Video module delivers considerably better results, and is of course very compact in size.

It lends itself extremely well for kiosk applications where space is at a premium (retail stores, for example), or where the application requires the delivery platform to be hidden from view.

Also, with the development of an extremely sensitive touch screen controller, which can be placed on the inside of a shop's plate glass windows, it is now possible for consumers (window shoppers) to access information on every product in the store, their features, cost, colour choices and so on – all of this when the shop is closed for business. Pretty good stuff, that. The possibilities are endless. If you are into decorating, for example, it is perfectly feasible to be able to select your room data (from thousands of permutations on disc) and then at the touch of a button choose a colour combination of your taste, mix and match, blend pots etc. until you have selected what you like in your own room.

Estate Agents are an absolutely natural target for this technology *[they're a natural target for more besides – Ed]*. Potential property seekers can view video footage of each location without having to leave the estate agent's office, until they see something they like!

With all this in mind, we at Commodore have formed ACE – Amiga Centres of Excellence. Our aim is to pull together all the best manufacturers of peripheral products, software and support services, such as bespoke software authoring and training, and make them available through ACE locations.

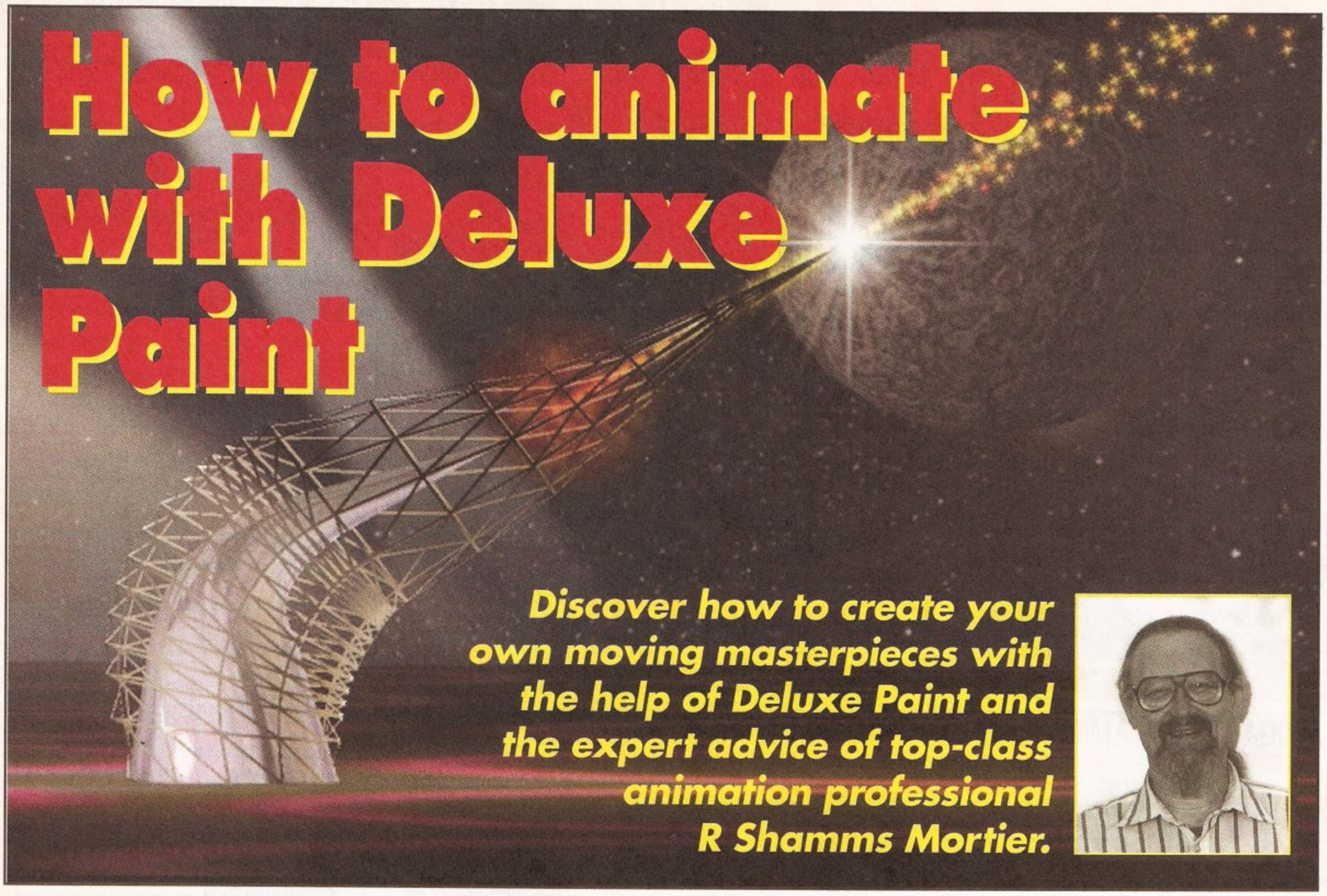
Any organisation wanting to learn about putting together a multimedia system, such as the ones described above, will be able to contact ACE for help and advice in the full knowledge that the level of expertise on offer is equal to the very best.

In line with this, we have already implemented our quality seal of approval program, in which manufacturers of peripherals can submit samples to Commodore for rigorous testing by our Technical Support Teams in the UK and USA.

If they perform to specification, are well made and offer value for money, they are then qualified to display our quality seal of approval logo. This is your assurance, as an end user, that you can have confidence in buying any one of these products.

I hope these initiatives will endorse your decision to buy Commodore products, and I thank you for your loyalty to the Amiga.

How to animate with Deluxe Paint



Discover how to create your own moving masterpieces with the help of Deluxe Paint and the expert advice of top-class animation professional R Shamms Mortier.

There is little doubt that people buy computers based upon the software available. Without software, the "mind" of computing, the hardware, is of little value no matter how fancy or fast it is. Considering this, there is also little doubt that Electronic Arts' *DPaint* software has helped to sell more Amigas than perhaps any other package over the years. *DPaint*, in all of its versions, is capable of addressing two different needs: 2D art and 2½D animation. 2D artwork can be created with *DPaint's* drawing/painting tools combined with the selection of colours from palettes. The process has the feel of traditional painting once you get used to the way that the tools work. Animation is another matter, except that you might consider animation as a way to make electronic paintings move.

It's fairly easy to understand the term "2D". It means "two-dimensional", and takes into consideration that your computer screen is a two dimensional surface (like an XY grid laid out before you). The *real* world is a spatial entity that we perceive as having three dimensions – "X", which we might say is the vertical, "Y" which we might say is the horizontal, and "Z" which we might refer to as "depth". Normally, we seem to perceive all objects in the real world as existing in all of these three dimensions. Since the computer screen is a flat 2D surface which we cannot "reach into", all manner of painting on that surface is painting in 2D. However, we can work on that surface in a way that makes it seem as if we were perceiving changes, animated movements, in all three dimensions (XYZ). This is why I am calling the *DPaint* animations we will investigate as potentially 2½D animations, though we will also see that true 2D animations are also worthwhile knowing about, and developing, in *DPaint*.

Just a short aside. When we speak of "3D" animating via the Amiga we leave the realm of *DPaint*, and enter that of *Aladdin-4D*, *Real3D*, *LightWave*, *Caligari*, and other true 3D modelling packages. This is because those packages provide us with ways to model seemingly real 3D objects in 3D space, objects that can be rotated so that you can see their other "sides". This is something we cannot do in *DPaint*, but only hint at. Just one more

HOW TO AVOID DISAPPOINTMENT

1. This article is not a DPaint manual.
Do not think that you can substitute this article for the *DPaint* manual. These are extra added tutorials that will teach you a few things, but will also expect that you are familiar with the general terminology used by *DPaint* users. Read the manual *now*, if you haven't cracked it yet. Get used to the terms in general use, as we will make no attempt to define the simpler ones. We also expect that you have a good degree of familiarity with the way the Amiga works, and that you know how to boot it up, access *DPaint*, and turn on various tools and menu selections, as well as being familiar with general load/save operations. And, oh yes,.we expect you to be a legitimate owner of *DPaint* and not some fly-by-night software pirate. Should the latter be the case, ask for forgiveness and dash to your computer outlet to purchase a legal copy of Electronic Arts' *DPaint*.

2. RAM, RAM, RAM !
Get some! Extra RAM is a necessity if you want to become involved in computer animation. How much are we talking about? As much as you can afford basically. Certainly working with less than 4Mb of fast RAM is not to be advised. Chip RAM, the other consideration, is also important. Older Amigas (A1000s) work with only 512K (and sometimes only 256K) of chip RAM, and early versions of the A2000 have 1Mb of chip RAM. For graphics intensive operations you need 2Mb of chip RAM. Take this advise seriously and upgrade accordingly.

3. DPaint versions
Upgrade your *DPaint* software! Version 1 and 2 are not suitable as targets of these tutorials. Version 3 is OK, but version 4 is really the version I would recommend. Version 4 AGA is suggested for all AGA machine owners (the A1200 and the A4000). The fancier you want to get, the better the platform you need to work on. Contact Electronic Arts now (☎ 0753 549442) and upgrade your software! This is especially important if you plan to market your creative efforts.

complication; often, thanks to Einstein, time is described as a separate dimension, and some packages that work in time (that is, produce animations) are said to work in a four dimensional environment – three dimensions of space (XYZ) and one of time. Some Amiga software even describes itself as 4D software, like *Aladdin-4D* and *Sculpt-4D*.

This is worth keeping in mind as we walk through the following tutorial specific to *DPaint*.

MOVE REQUESTER: DOORWAY TO DPAINT ANIMATION

There are two sections in the *DPaint* manual that explain the animation tools fairly thoroughly – "Animation Basics" and "Animation Effects". The first step in designing an animation is to bring up the "Set Frame Count" requester, and tell *DPaint* how many frames long your animation will be. Along with this, you choose the playback speed, which defaults to 30fps (frames per second), though the processing speed of your Amiga may not allow that fast a frame rate unless you have an accelerator board. Speed can also be altered during playback by tapping either the Left Arrow (slows down) or the Right Arrow (speeds up). The whole point here is to use the "Brush" that is currently active and to set it in motion, or to paint different items on each frame. The frames advance by hitting the "2" key, and they reverse by hitting the "1" key. They can also be returned to the first frame (Shift-1) or advanced to the last frame (Shift-2). Frames can also be inserted or deleted from any sequence. You can create your animations in any resolution, remembering that Lo-Res allows the most frames, Med-Res and Video-Res about half as many, and Hi-Res about a quarter as many in the same storage space. Overscanned screens also eat up more disk space.

The Move requester is at your disposal, allowing you to turn a Brush on any axis (giving you a perceived 3D effect, or as we said before, making *DPaint* animations 2½D), and to reduce or enlarge it in increments for the animation sequence. Another facet of *DPaint* animation is that colour cycling can be added with the touch of the tab key for even more awesome results. We'll say a bit more about colour cycling animation later in the article.

The Move requester is one of the most awesome animation tools in any software, and it has several fancy options in addition to moving and rotating Brushes. Brushes can rotate on the screen's axis or on their own axis. Each Brush can be reset to an originating position with a "Go Back" command, and a neat little *DPaint* tutorial included in the manual demonstrates this visually. "Cycle" allows you to tell an animation to "loop back" upon itself, creating a continuous motion (you can also "Ping-Pong" the animation, forcing it to run forward then backward continuously, or choose to play it through just once or a determined number of times). An "Ease-in/Ease-out" button causes the animation to slow or speed up at determined sections, allowing certain movements to be observed as more "natural". There is a "Record" choice that specifies the directions in which *DPaint* paints the frames of the move: "Forward," "In-Place," or "Backwards." You would use "In-Place" only when needing to paint an animation sequence over itself on one frame. Two more of the selections here are ones that I am especially fond of – "Trails" and "Fill". "Trails" causes a succession of trails to tag behind a movement, much like what an animator uses in standard tracing paper animation techniques. "Fill" is really "Fill Plane", and it generates a perspective plane that moves in accordance with the parameters set here. The result is an animation that seems like you're looking out of an aircraft window at a spinning perspective world far below. The effect can be quite dizzying to say the least. All moves can be previewed in wire frame before you paint them down. Getting used to working with the *DPaint* Move requester is an absolute must if you want to use *DPaint* to its fullest.

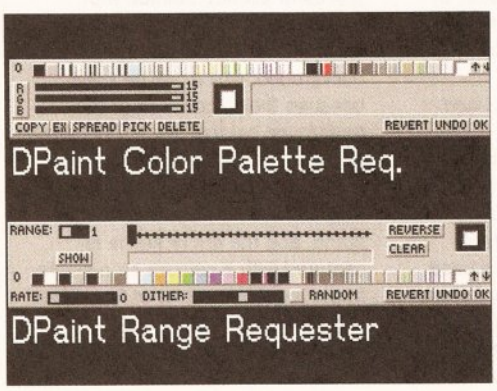
JARGON BUSTING

ANIMbrush – an animated picture that can be pasted down anywhere in an animation in *DPaint*.
Brush – a graphic smaller than a total picture that can be stored on disk and used later as an element in a picture or animation.
Cel Animation – creating a series of paintings on a clear acetate sheet or "cel".
Digitisers – video and audio capture devices that allow the computer to take in imagery and sound.
Flying Erase Heads – elements present in the best video decks that enables the professional editing of tapes.
Four-D (4D) – referring to the three dimensions of space (usually labelled X, Y and Z) and one of time. With thanks to Albert Einstein.
Frame-Grabber – a device that will "grab" a frame of video while a tape is running.
Genlock – a device that enables you to place computer art and animation over a live video signal.
Tweens – transitional frames in an animation.
Key Frame – important animation frame; the focal end-points for "tweens".
Move Requester – a vital attribute of *DPaint* for controlling animation.
Pixel – a small coloured rectangular element of a display
Pixelation – making an image look blocky, pixelated.
Process Animation – watching any process or action develop over time.
RAM – Random Access Memory. It's vital for animation – the more the merrier.
RGB – Red, Green, Blue. A system of creating colours from the three primaries.
RotoScoping – painting over a photograph or video frame.
Solarization – changing the palette of a video frame and making it appear metallic or "posterized".
Stop-Motion – creating a video with images that look like time is speeding up.
Storyboarding – the visual plan that dictates a video or movie script.
Three-D (3D) – three spatial dimensions (X, Y and Z).
Tracing Paper Animation – a technique that enables you to see "Speed Lines".
Two-D (2D) – two spatial dimensions (X and Y).
Zoetrope (Zoepraxascope) – a turn of the century device used to display moving pictures. Also the film company set up by Francis Ford Coppola.

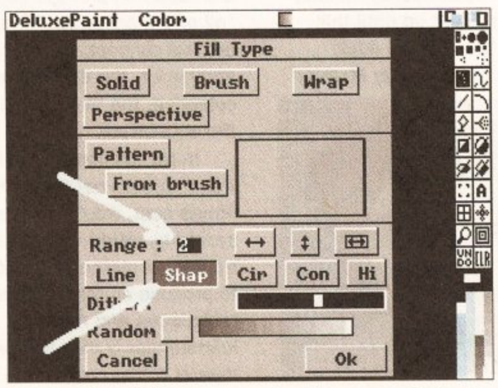
ANIMBRUSHES: PAINTING WITH TIME

AnimBrushes were first introduced to *DPaint* in its third version, and are now one of the most established ways that an animator works. An AnimBrush is a moving picture that can be painted down anywhere in a *DPaint* animation. In order to advance to a creative level in *DPaint*, you have got to understand the use and application of AnimBrushes, and therefore must begin by reading the manual and working through the AnimBrush tutorials. This is a must! As standard "Brushes" can be stored in a library for later use in a picture, so AnimBrushes, moving actors, can be stored away for later use as well in an animation. The later section on Digital Puppets makes use of your ability to create and store AnimBrushes.

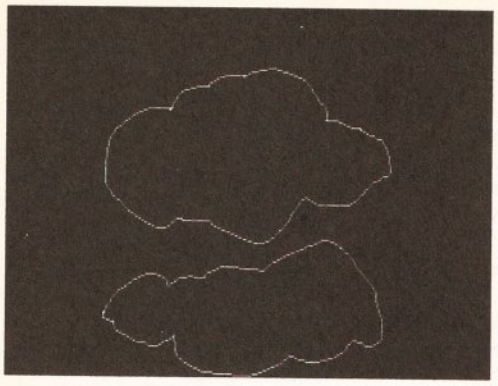
As you develop specific "actors" in your animated masterpieces, they can be saved individually as "AnimBrushes" for later use. That means that a character or animated element can be loaded and used against many separate backgrounds, and different AnimBrushes can be combined in an infinite series of stories. By holding down the Left Amiga key while you've got an AnimBrush in hand, you can automatically paint the Brush into each progressive frame of your animation. The secret of not going totally and utterly crazy as an animator is to accomplish tediously repetitive tasks with ease, and there's nothing easier, or more fun, than using this tool. If you continue this past the ending frame number, the Brush repeats its movements across another part of the screen, so that you can fill the whole screen with animated movement, using just one AnimBrush, while moving it at the same time. To get even more intricate, you can bring up the "Anim Brush Settings" requester and change the speed and direction of any AnimBrush. The chapter on animation effects in the *DPaint* manual has some more advanced ways of manipulating AnimBrush animations.



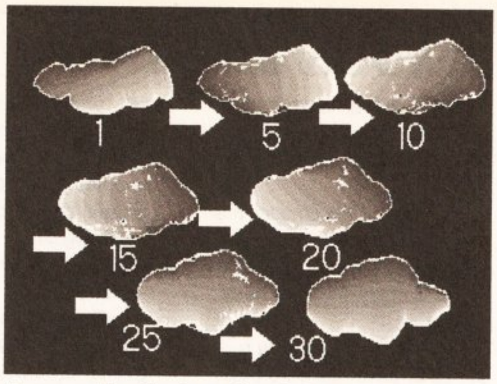
Here is the DPaint Palette requester and the accompanying Range requester (bottom).



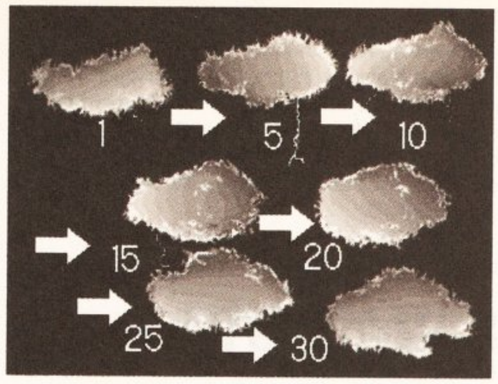
The DPaint Fill-Type requester shows a selected range of grays for our cloud object.



To animate a lightning storm you start off with simple cloud outlines before filling them.



Here are the clouds as they look on separate frames. Notice how the fill "spins".



These selected frames show the "lightning" as it strikes out from the DPaint cloud.

ANIMATING A LIGHTNING STORM WITH DPAINT

I love to watch a full blown electrical storm roll over the Vermont ridges in the heat of a summer night. You can see them approaching from miles away if you're positioned on one of the heights. Clouds swirling with the wind, internally set aglow from electric explosions, and every once in a while sending a glittering sliver of blue-white lightning to the ground. It sort of puts you in your place, realising how insignificant we are compared to natural forces.

Amiga animators can simulate many natural materials and events in their computer animations. This article will walk you through the creation of animated storm clouds in a step-by-step procedure, and will also introduce you to the use of Colour Cycling as an animation technique. It requires that you have an Amiga with at least 1Mb of memory, and a (legally purchased) copy of *DPaint* (preferably *DPaint IV*) from Electronic Arts. It also assumes that you have some general experience with using your Amiga as an artistic tool, and that you have a modicum of control over the mouse as well. Other than that, your close attention to the procedure should result in storm-cloud success! Let's begin.

We will be working in Lo-Res for this example, though I suggest working in 256 colour Hi-Res or HAM AGA for videotape suitable results. Starting in Lo-Res gives us quicker screen refreshes for experimental purposes. Please refer to your *DPaint IV* manual if the directions presented here are either too incomplete or confusing for you to interpret. It is assumed that you have some experience with *DPaint* before trying to duplicate this tutorial.

Bring up the Colour Palette by striking the "p" on the Amiga keyboard (see the picture on page 11, bottom left). We are going to use just two main colour ranges, but later you may want to either change these ranges or use more than two to see what variations you can create (with more shades and variations, other-worldly clouds can be created). You can use either HSV or RGB "spreads" to do this exercise. I am going to use a range of grays for the clouds and blue-whites for the lightning. You may also opt to use yellow-whites for the lightning. On the range of colours in front of you are 32 colour pots. Select number 3 and make it a medium blue, and spread this colour to pot 18 which you have to make a pure white. Now create a spread of colour from pot 19 to pot 32, making it a range of grays from dark to pure white. Exit the colour palette.

Now bring up the "Range" requester (see the picture on page 11, bottom left) by hitting the Control key [CTRL] and the "R" key at the same

TEN TOP ANIMATION TECHNIQUES

Animation began even before film itself entered the picture, with the "magic lanterns" or zoetrope wheels. Before that, painters would now and again try to elicit motion by doing a series of static paintings and placing them side by side.

I remember seeing a series of images that the painter Goya produced in the early nineteenth century. The images depicted a monk being robbed, and they were placed in succession so that the eye was forced to take them in one after the other, like a movie. (If Goya were alive today, would he be an Amiga-phobe?). Because movement is commensurate with life itself, the urge to depict static form in a way that implies movement has been the visual artist's obsession for millennia. In the Palaeolithic caves, splendid red ochre wall paintings show Bison and Antelope with six and eight legs, the work of some pre-dawn-of-history proto-animators.

Certainly animators existed before Disney. But he had one talent that the rest of them lacked, and that was the ability to gather working groups of very talented individuals in one place, in order to focus all of their energies on singular projects. It is with Disney that the main child of the Industrial Revolution, assembly line production technique, is allowed to jump into bed with the arts. And from that marriage in 1928, the Rodentia Magnificat, Mickey Mouse, was given birth. Right up until this very day, from the political adult animations, to the Saturday Morning Mania, the art of animation continues to be the result of a many faceted collaboration of large numbers of individuals on each production.



To the left you see a photographic image grabbed into the Amiga.



The same image as to the left, but RotoScoped by painting over it.

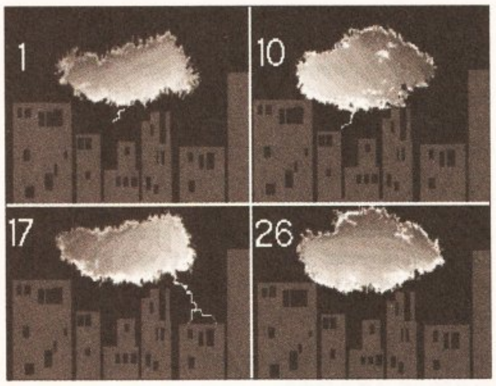
The main lure of computer graphics is that the individual, the lone creator in addition to the group, can again contribute as an individual producer. Large projects with short deadlines still work better if the work is spread among several animators, each dedicated to a specific task or character. But if the deadline is only one of convenience, then it is completely possible for a single individual to do all of the required animation on a single computer. By "all of the animation" I mean the original concept, the storyboarding and layout, the drawing and colouring, the titles, credits... *and* the soundtrack.

In my opinion, the animator who would stretch her/his wings in the Amiga nest, would still be best served by studying the variety of traditional methods and items used to produce animated visuals. Certain techniques and methods are best learned slowly over time with a master of the craft. Art is more than the production of a thing; it is the involvement in a transformative process. Aside from the philosophical and aesthetic considerations is the exposure of the animator to a variety of techniques. Many of the Amiga animation packages to recently hit the market seem to dwell upon only one way of producing meaningful animations, as if the art itself were boxed into a definitive style and direction, usually equated with the work of Disney. Allow me to share with you a number of animation methods that are possible on the Amiga.

1. Let's start with the flipbook method, also called "cel" animation. Traditionally, cels are sandwiched pieces of acetate painted with special polymer paints. Each cel is meant to be joined with a background, which can be seen because there are areas of the foreground cel that are left unpainted and transparent. When the two (or three, or four...) are joined together, they are usually placed on a copy stand, and the entire scene is captured with a camera on a single frame (or two or three) of film. Most of the advertisements that accompany Amiga animation software attempt to centre upon the cel animation process. *DPaint* and *Brilliance* both have excellent cel

time. *DPaint IV* enables you to have up to eight separate ranges of colour. If you are working in HAM (or better yet HAM-8), you will get a truer colour spread from one colour to the next. If you are not, the Amiga will attempt to interpolate some in-between colours. Since we have simplified matters greatly by selecting only two simple ranges of colour in our palette, the results should be smooth and evocative. We are going to set two separate ranges: one will include all of the blues to white, and two will be our grayscales. Proceed to set each in turn.

. Now go to the Fill requester (Right mouse on the Paint Can icon), and select the SHAP button (shape fill). We will now fill each cloud frame with a shaped gradient of grays (range 2). Every time we go to the next frame to fill a shape, we will choose a new angle in a counter-clockwise direction, until



A background of buildings has been added. When Colour Cycling is activated (TAB key), the whole scene flashes when the lightning strikes.

we've come full circle at frame 30. Run the animation (see the central picture opposite) to see how it looks, and make any corrections to single frames you deem necessary. We could leave things as they are at this point and save the moving cloud as an AnimBrush, but let's take another couple of steps to get things more organic looking.

Clouds have fuzzy edges, so let's treat each frame so as to create a more believable cloud. First, use the "Smear" tool in the modes menu to smear the edges of each cloud frame. Now create a large rectangular brush on the "scratch screen", pick it up, and choose "Smooth" in the modes menu. Use the rectangular brush to smooth out each cloud frame by stamping it over the cloud (make sure "Smooth" is still the chosen operation first). At the end of your efforts, you should have a nice organic looking cloud. Run the animation to test it, making any additional changes you desire.

The *DPaint IV* Range requester offers many options as far as setting cycle ranges. If you look at the "track" at the top, you'll see that there are as many positions as colours in our 32 colour palette. By placing any colour in the palette on a track position, you can create an almost infinite series of dithered effects and cycle options. If you are not working in a HAM mode, the program will attempt to use a dithering algorithm to fill in colours where there are blank spaces. In non-HAM modes this looks rather chunky, but it serves our experiment OK. When you think you've got the hang of this process, re-render it in a HAM format for a much smoother result.

Lightning is a jagged and quick affair. To get the effect, I turned on the "Lightbox" in *DPaint IV*. This lets you see through a frame to its preceding one, which is an unbelievable aid in creating animations. My lightning strokes use the one pixel brush, and I varied the line a bit in every frame to make it look more random and sparkly. I used the range of blues for my lightning. To make the strikes look more random (which is vital if you want to record this to video for a few seconds of multiple looping), I started one strike when the other was in the middle of its phase. I drew a quick little cityscape for reference, and lit up the windows of the building that were being *hit.* I could just as well have created a Transylvanian castle as a prop, or had the lightning hit and explode a tree. There could even be a person running quickly to escape the storm. The variations on this theme are endless. I colour-cycled the grays slower than the blue tones, making the entire city slowly light up from the flash. The overall effect is very interesting, and I hope your experiments with these techniques also prove equally intriguing and fascinating. See the picture to the left on page 14 for an idea of what my finished frames look like.

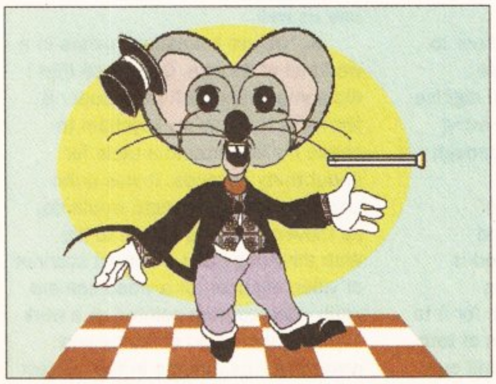
PRACTICAL USES OF THREE ANIMATION TECHNIQUES

What do you think of when you consider the term "animation"? I'll bet Disney comes to mind pretty much first off. The type of animation brought to long life at Disney studios is know as "cel animation". A cel is a piece of clear acetate upon which a series of drawings are made that depict phases of objects, events, and beings in motion. cel animation is quite possible on the Amiga. In fact Disney studios operates a whole collection of Amigas to aid their animation productions. But cel animation is only one of a much larger collection of animation modes. For the beginner, or novice computer artist, it sometimes seems as if mastering this procedure alone would qualify one for admission to the animators' arcane guild. There are several other ways to shape an animated piece.

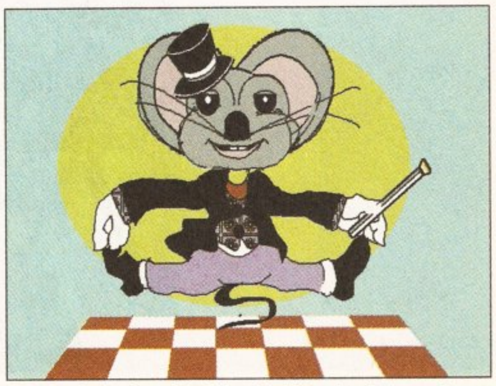
In addition to the right software for the job, there is a list of hardware items that you should consider procuring (either through individual purchase, or shared expense with other animators). They will allow you to develop your finished work in a most professional manner suitable for showing and broadcast. As far as the hardware is concerned, it is not inexpensive, and the vendors (and quality) vary. Some of the vendors have even bloated their prices because of the popularity of select animation items, so shop around. There is a growing need for quality, yet lower priced, animation tools, and in time the prices will drop.

For quality results the computer/video animator needs a professional video deck (with "flying erase-heads"), a single frame controller, maximised storage capability (at least one hard drive, preferably with removable/replacable media, or a read/write CD-ROM device), access to editing decks and controllers, and at least 4Mb of "fast" RAM on the system. All of this in addition to the Amiga hardware and software. Oh yes, if you're going to be producing images that are generated in 3D on your screen, then you should also think about an accelerator board with a 68030 or 68040 processor, and a math co-processor chip as well. In animation, time is not only money, it is also sanity. Digitisers, frame-grabbers, and genlocks may also be necessary, depending on the projects you wish to tackle.

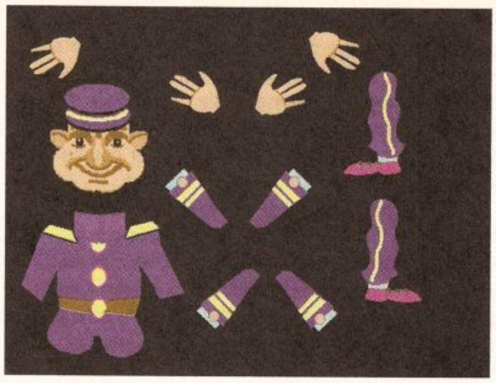
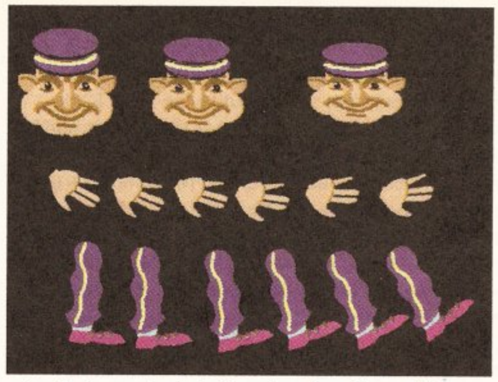
Now, what other animation techniques exist besides cel animation? Let's start with something called "process animation". (See the tutorial on doing a process animation in the *DPaint* animation article above). Process animation allows you to witness the evolving artistic process as an integral part of the "feel" of the story. We've all witnessed this technique at one time or another, and whole beautiful pieces have been created by just utilising this method alone. In process animation, you may see a figure being drawn or painted before your very eyes. Colours fill areas of the work as if by magic. All of the while, the narration is superimposed over the visuals, carrying on with the story. Anyone with a video recorder and a paint package could at least *begin* to experiment with process animation. Just tap the video out of the computer and hook it up to the video on a tape deck and begin. The video out on most Amigas is only in black and white, but that's really good enough for you to take the first steps on the road to perfection. Later, when you are creatively, and more importantly financially, ready to surge ahead, you may want to add a genlock-encoder so that you can







Above you can see selected frames from a DPaint "cel" type animation, also called the Flipbook Method. Each cel is joined with a background.

The first step in developing a Digital Puppet is to create the separate parts. In the middle picture of the series above, I've reduced all of the parts, and where possible doubled and flipped them to create pairs where necessary. I've also made lower arms and hands in order to maximise my animation opportunities as much as possible. Once you have the elements of the animation drawn, the next step is to create AnimBrushes from them. The picture above should give you an idea of how the actual AnimBrushes we used to create the full digital puppet work, and how the parts move.

animation techniques, most of which are also possible on the Amiga. Since we are focusing so heavily upon *DPaint* in this issue of *Amiga Shopper*, let's investigate some of these other animation forms with an eye to how they can be developed on the Amiga with the aid of *DPaint*.

PROCESS ANIMATION

What is "Process Animation"? Well, think for a moment. What is a "process"? A process is a description of an event in its action phase; how something develops from one state to another. Building anything involves a process, and process animation is an attempt to capture each phase of that process so that the entire event can be played back, allowing you to witness the birth to maturity of the subject being targeted. Take a painting for instance. A process animation of a painting would be different than a movie of a painting being done. In a movie, you would see the artist and her/his brush as well as the work. In a process animation of a painting, you would see only the canvas, and over time, you would see the paint magically appearing over it as each element of the painting developed. Process animation is great for illustrating children's stories, and is used to do just that on televised shows. *DPaint* is a great tool for creating process animations.

It's probably best to work in low resolution unless you have a RAM heavy system (four or more Mb). Think of a simple painting to start with. It's getting a feel for the technique that's important here, as you can do a more complex painting later. Start your painting on a blank screen in *DPaint*. After every couple of millimetres or so of new painted areas, save the picture out as one frame of the animation. Name each picture with a three number numeric extension, from lowest to higher in succession (.001, .002, .003, .004...). Keep doing this as many times as needed until your work is done. The smaller the increments between saves, the smoother your finished animation will look upon playback. When finished, load the whole lot of frames in at once, and press "4" to see the animation played back. The painting will magically paint itself in front of your eyes.

TRACING PAPER ANIMATION

My master animation teacher, David Ehrlich, used this technique almost exclusively, and his

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record to video in full colour.

2. 3D computer generated animation is a special category, and the Amiga 3D packages that utilise it (*Aladdin-4D*, *Real-3D*, *LightWave*, *Caligari Broadcast*, *Sculpt*, and more) have special ways of doing their tasks. Ask around and read all the reviews before jumping into this area, as the leap can be quite expensive. The idea behind 3D animation is to develop only the "key frames", the points in your story that are major visual moments. After that, the computer can grind away and fill in the "in-betweens". If you're working in 3D it's vital to have an accelerator board installed to speed up the process, as it is computationally very intensive. Animations of this type usually require post production editing of sequences, so access to that level of hardware (video editing equipment) is vital. In the States, you can access the professional equipment that resides at local public access TV stations, as this is a mandated public service. Obviously, before you can engage in any kind of animation, you have to design and create the 3D objects and elements. Drawing out your plans visually is called "storyboarding".

3. "Tracing Paper Animation" is yet another *look* or form. With this procedure, the aim is to allow the previous frame to "show through" the one you are shooting. The final result is a piece that allows the moving elements to leave "traces" as they fly around the screen. There are only a few packages that allow this automatically on the Amiga. The "Pencil Test Mode" of Disney's Animation Studio comes to mind first. *DPaint* animators can accomplish this style with a little work (see the "Animating with *DPaint*" article above). Another way to accomplish Tracing Paper Animations is to allow a digitiser to do the work. Do your separate frames on tracing paper, and digitise either two or several while leaving the previous ones showing through the present frame.

4. "Torn Paper Animation" produces some wonderful and evocative results. This method is really a cousin of the process method, but different enough for it to be in a class by itself. Pieces of torn paper or fabric move under and over each other until a scene is produced. Narration and/or music is continuous. With the Amiga, you could use either paper or other 2D material (such as fabric) to achieve similar results with the *DPaint* software and a digitiser. In addition to digitising your work frame by frame, you could create electronic "paper" composed of polygonal shapes, entirely on the Amiga screen. You could also digitise elements from newspapers or books for that "Monty Python" look. Canadian animators, recognised the world over as some of the most experimental and creative around, have pioneered yet another technique by using shifting shapes in sand as a variable form. With the right Amiga equipment (a digitiser and an enclosure to hold the sand), this method could be open for you to use as well.

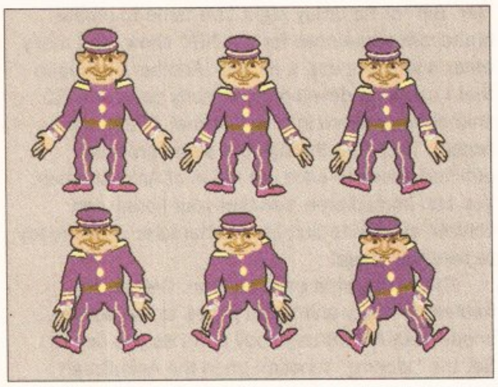
5. "Object Animation" exists in a world all of its own. One piece that I did some years back (with super 8 film) was to allow my keychain to chase my key around a table for about thirty seconds. It was quite effective. Any 3D objects would do, as movement brings them to life. With the Amiga and a flatbed scanner or video digitiser (or a video camera /still-video camera pointed at a work surface), you could do some very rewarding experiments in the "Object Animation" category. You will have to



Animation existed long before Disney entered the scene with his magic world.

superlative work has been shown all over the world. He draws on tracing paper and then photographs his work with an animation camera. He uses tracing paper because you can see through it, and when he photographs the finished frames he always leaves about five previous frames stacked beneath the one being photographed. The result can be compared to witnessing dissolving "speed lines" in each frame, since you are seeing new frames being incorporated with older ones. This works very well in black and white, so let's begin our *DPaint* tracing paper animation with that in mind.

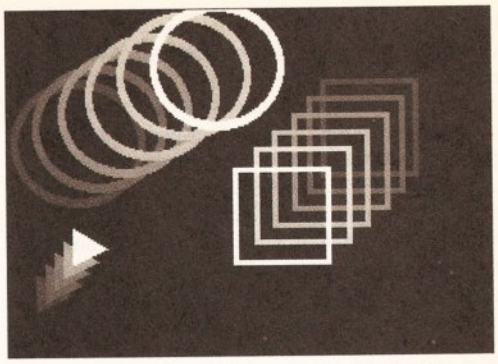
Work in low resolution with a palette of eight greys from dark (colour 1 as a dark grey, RGB settings = 4, 4, 4) to light (using white for colour 8, RGB settings = 15, 15, 15). We'll reserve colour 0, leaving it black for now, for our background colour (RGB settings = 0, 0, 0). Do a simple drawing on your screen in white. Keep it fairly basic so you can get a real feel for the technique. When finished, save it out as MyFrame.001. Now alter the shape a bit by erasing and redrawing certain areas, or just pick the same shape up as a brush, move it slightly and paste it down again. Save it out as MyFrame.002. Do this until you have 30 single frames of an animation. Again, the smaller the increments of your alterations, the smoother the playback will look.



The fully animated digital puppet can take on any choreography you want, as long as you have the right AnimBrushes to plug in. All of the AnimBrushes are developed from basic drawings.

When all of your preliminary frames are saved out, the real fun begins. Create a blank animation canvass by going to the *DPaint* ANIM menus and setting the frame number at five more than the number of single frames you saved out (for instance, if you saved out 30 frames, make the frame number read 35). Import the first frame from the saved out pictures (your saved picture MyFrame.001) on to screen frame 6 (skip the first five screen frames for now). Import the second saved picture into screen frame 7. Continue along until all of your saved out pictures occupy all of the screens, except for the first five which should have remained blank. Now copy your last picture on to screen 5, second to last on screen 4, third to last on screen 3, fourth to last on screen 2, and fifth to last on screen 1. Play this back (using number 4 on the keypad) just to see what you've got so far.

Now the object is to take each frame and combine it with the 5 frames that preceded it. To do this is rather tedious, but less so than if we'd been doing it by hand. Using the alternate screen in *DPaint* (accessed by hitting the "J" key, which is also why it is called the "J-Screen"), we will bring in each of our frames one-by-one, and save each of them out five more times. Instead of saving them out as white (RGB 15, 15, 15), we want to save each frame out as different greys: RGB 13, 13, 13 for MyFrame.001B, RGB 11, 11, 11 for MyFrame.001C, RGB 9, 9, 9 for MyFrame.001D, RGB 7, 7, 7 for MyFrame.001E, and RGB 5, 5, 5 for MyFrame.001F. Do this for every saved picture in the sequence, so that you wind up with six pictures for every one previously saved out (one as white and the other five as the varied greys mentioned. Now for the stacking.



Using the techniques for producing Tracing Paper Animation described in the text, it's easy to use DPaint to generate a nimations that incorporate the "Speed Line" effect.

The object is to show the forefront frame in white overlayed upon the previous five frames in decreasing levels of greys. Probably the easiest way to achieve this is with *ADPro* or *ImageFX* utilities, but that would take us away from our sole concentration on the *DPaint* software, so let's see

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do some experimentation to test the focus and "depth of field" however, because 3D objects have depth and some scanners will not pick up all the necessary detail.

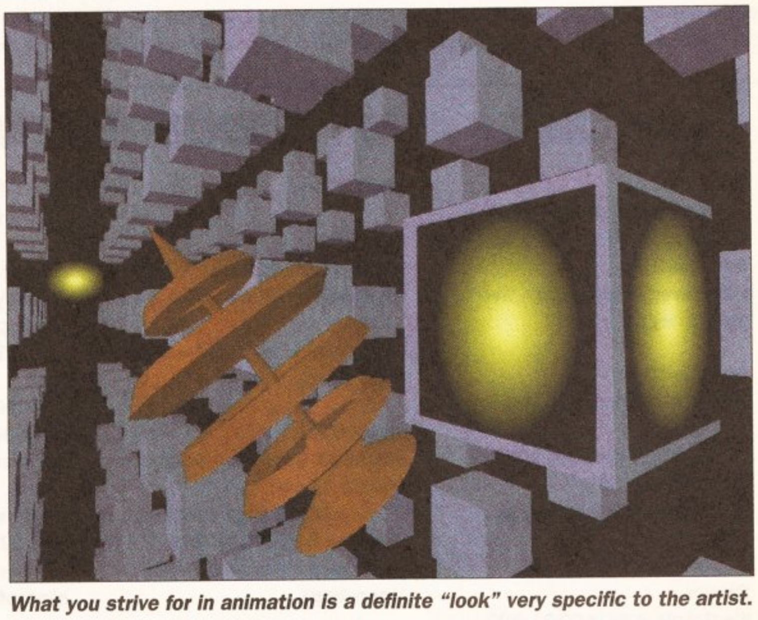
6. "Pixelation/Solarization Animation" can be defined as allowing some moving footage to become blocky or smeared by purposefully causing the small picture elements of the computer screen (pixels) to become enlarged or blurred. This technique is used much in music videos. With the NewTek Video Toasters "Chroma-FX" module, the A-Squared "LIVE" board, or some of the Amiga's fine image processing software (*ADPro*, *ImageFX* and *ImageMaster*) you can pixelate moving images to your digital heart's content, as well as applying other more esoteric effects.

7. "Rotoscoping" is the procedure used to transform live video footage into painterly images. This is being used more and more by advertisers on the tube. It was first pioneered by (guess who?) Disney in *Sleeping Beauty* back in the Thirties. With a series of captured video frames stored and called up on the Amiga, rotoscoping becomes an Amiga reality. You could then paint over the photo image with software like *DPaint* or *Brilliance*, or better yet with one of the more diversified 24-bit painting packages.

8. As far as I know, nobody has yet dedicated their Amigas to Claymation productions. Will Vinton's *California Raisins* still make their way to your screen using traditional Claymation techniques, but it is possible. Claymation takes a lot of time and a lot of planning. Multiple figures have to be created to replace those that melt under the hot lights. You might even consider using the Martin Hash Enterprises' package called *PlayMation*, which has been endorsed by Will Vinton Studios, if this is a technique that interests you.

9. Don't you love those Spielbergian clouds that flutter across the sky? Well, the animation technique that is used to produce many of them and other effects as well is called Stop Motion Photography. Through Stop Motion, we can see an apple slowly give way to the pierce of an arrow, and we can witness the sacred hidden magic of the opening rose to the light. Now, with the *Video Timelapse* and Simpatica package from Optonica and a decent video camera (S-VHS or Hi8 is the best choice) we can produce Stop Motion effects and backgrounds with the Amiga.

10. You can construct and move a multitude of puppets and process the digitised results through the Amiga. They can be constructed from a wide variety of materials in either two or three dimensional versions. Puppetry is one of the oldest forms of animation. You can be among the first to translate it to the Amiga screen. In addition, you can create "Digital Puppets". Just see the brilliant section on Digital Puppetry in the "Animating with *DPaint*" article above.



What you strive for in animation is a definite "look" very specific to the artist.

What you strive for in animation is a "look", a way of organising the moving visuals so that they themselves tell a story and come to life. This look can be as representational as Disney or as abstract as a latter day Picasso. "Looks" carried on over time becomes "style", and a style becomes the artist's trademark. Style is something which is slowly achieved over a long period of time by risk and experimentation, and by trying to bend and warp the processes in unexpected ways. The Amiga is a tool to help you achieve your style as an artist and animator, no matter what mode of animation you decide upon.

how to accomplish the same thing in *DPaint* only. Go back to the screen that contains all of your pictures in white outline (hit the "J" key again), and return to your first picture which should be on screen six. Use the *DPaint* stencil-protect option to protect the white colour of your drawing. Now load in MyFrame.030B as a BRUSH (not as a picture!), and paste it in place over the white drawing. If you followed the directions with care, the white area of the original drawing will not be disturbed. Now re-stencil the picture by protecting the white and grey on-screen (the "B" grey should be the one added to the protection scheme). Now load in MyFrame.029C as a brush and repeat the process. Do this until the last operation you perform is to add the final layer, MyFrame.026F, and you'll have the first complete frame of your Tracing paper animation completed. Now follow this same procedure on all of the rest of the 30 frames (your second completed picture, for example, should show a layer that includes MyFrame.002, MyFrame.001B, MyFrame.030C, MyFrame.029D, MyFrame.028E, and MyFrame.027F). Make sure you use the correct stencilling operation each time. How about the blank five frames at the start? Well, if you animation "loops", that is if the first picture returns to look like the last one, you should perform the same procedure on the last frames and paint them to the first five blank screens to name the animation loop correctly. If not, then just erase the first five screens and remove them from the frame list. When completed, you should see what an animator calls "speed lines" in the animation. There is no reason why you can't take this same technique once you understand it fully and work in full colour.

DIGITAL PUPPETRY

For our last variation on the theme of *DPaint* animation we will venture into a land I call "Digital Puppetry". For this a little drawing expertise on your part is best, but even stick figures can show the process successfully. We will take advantage of the miraculous AnimBrush format in *DPaint* in order to accomplish this exercise.

> **"Animations need to posess original and unexpected choreography to establish their unique and memorable character"**

We are going to construct our digital puppets in parts, and store them away in a library of parts. This library is only limited by your storage media. It can be a number of floppies, or exist in a dedicated region on your hard drive. You will need to study the *DPaint* manual as far as how to pick up and save AnimBrushes, as well as how to manipulate them in the various ways they can be configured. Other than that, the rest should be really quite easy to understand.

First, create ten empty frames to draw on (make Frame #=10 in the ANIM menu). Draw a lower arm with a hand attached on frame 1, and use the "LightBox" utility (see the *DPaint* manual) to draw altered versions of it in frames 2–10. Then turn the LightBox off, and pick up the entire 10 frames as an AnimBrush. Name the AnimBrush "LowerArm#1" and store it in your Digital Puppets/AnimBrush library. Continue in the same manner with an upper arm, an upper leg, a lower leg with foot attached, a torso, and last of all a head with moving features. As I said at the start, if you have some drawing or cartooning skills for this one, you'll be ahead of the game. This is the same technique actually used by the creator of "Mr. Bill" of Saturday Night Live fame to create broadcast sequences for the NBC show, and many other animators use it as well. Another technique that I use is to develop these body parts in a 3D animation program in a format that *DPaint* will accept. Then I go through the same process outlined above to save out loads of AnimBrushes. You can immediately see that your library can contain an infinite number of character parts, ready to take the stage!



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The basic design of the Thrifty logo.

The next part is easy and fun. Create 20 frames of empty animation pages to the screen. Import your AnimBrush body parts as you desire. Set the "looping" function on in the AnimBrush requester for each imported AnimBrush (see the *DPaint* manual for details). Paint the parts down wherever desired, connecting the AnimBrush elements the way that your figure is to move. Sit back, run the animation, and appreciate the work you've done. Then take some time to storyboard an animated movie that takes advantage of this technique, and away you go!

USING DPAINT'S MOVE REQUESTER TO FLY A LOGO

Many broadcast stations are investing in the Amiga, but even with the equipment in hand, they still need experienced users and designers to handle specific tasks from time to time. The work usually has a deadline of two to three weeks, and it pays far less than the "standard" set by users of higher end systems. This "standard" may net a designer thousands of dollars a day, which is a price few local vendors can afford. Yet those very same local vendors often want to incorporate computer generated graphics and animations in their commercials, so the answer for them is obviously to find an affordable way to accomplish their requests.

Some tasks are without question too complicated for the less enhanced standard Amiga. Most of the requests from vendors, however, are quite approachable with an Amiga that has just a few niceties (like good animation software, which the Amiga undoubtedly has in abundance). Most of the commercial work around centres upon designing and/or animating "logos", company graphics that are visually recognisable symbols of that organisation's product or technique. It is just such a task that I will now describe to you, in the hopes that the creative process used in its completion will enhance your knowledge of what is possible for those interested in pursuing a similar course.

THE PROBLEM

(You may wish to try to duplicate this animation, or

DEVELOPERS AND PRODUCTS MENTIONED

ADPro
ASDG ☎ 0101 608 273-6585
UK Supplier: Meridian ☎ 081 543 3500
(Reviewed in issue 10 – five star rating).

Aladdin-4D
ADSPEC ☎ 0101 216 337-1329
UK Supplier: Hobbyte ☎ 0727 856005/841396
(Reviewed in this issue, see page 20).

DPaint
Electronic Arts ☎ 0101 800 245-4525
UK Supplier: Electronic Arts UK ☎ 0753 549 442
(Reviewed in issue 10 – five star rating).

Caligari
Octree Inc ☎ 0101 415 390-9600
UK Supplier: Meridian ☎ 081 543 3500
(Reviewed in issue 33 – three star rating).

ImageFX
GVP ☎ 0101 215 337 8770
UK Supplier: Silica ☎ 081 309 1111
(Reviewed in issue 27 – four star rating).

ImageMaster
BlackBelt Systems☎ 0101 800 852-6442
UK Supplier: Amiga Centre Scotland ☎ 089 687 583
(Reviewed in issue 18 – five star rating).

LightWave (Toaster)
NewTek Inc. ☎ 0101 800 843-8934
UK Supplier: Ramiga International ☎ 0690 770 304
(Reviewed in this issue, see page 22).

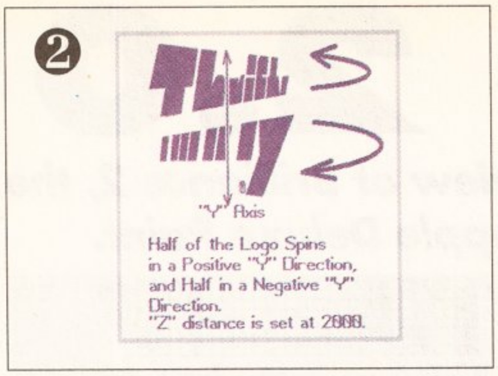
***Real3D* (*R3D* and *R3D2*)**
Activa International ☎ 011 312 0691 1914
UK Supplier: Activa UK ☎ 081 402 5770
(Reviewed on page 20).

Sculpt-4D
Byte-by-Byte
UK Supplier: Alternative Image ☎ 0533 440041.

Animation Studio
Walt Disney Computer Software Inc.
500 S. Buena Vista St.
Burbank, CA 91521 ☎ 0101 818 973 4390
(Reviewed in issue 1 – three star rating).

Playmation
Hash Enterprises
2800 E. Evergreen Blvd.
Vancouver, WA 98661 ☎ 0101 206 573-9427

Video Timelapse & Simpatica
Optonica, The Terrace, High Street, Lutterworth, Leics LE17 4BA ☎ 0455 558282
(Reviewed in issue 1 – four star rating).



The animation plan is represented here, so that both halves of the logo will spin in opposite directions for an interesting effect.

one like it, on your own by following these instructions). I got a call from the Creative Director of a regional TV station outlining the following request on a Monday. The deadline for the finished work was the following Monday. This is normal in the design business. If you are a designer, you either meet deadlines or refuse to take on the work. In either case, laughter is vital. The vendor, "Thrifty Rent-A-Car", wanted a three second animated logo at either end of their commercial spot. The "copy" (what a vendor gives you to literally "copy" from) was a publication with the logo intact, and a small sign that had the same graphic. The request demanded that the "jaggies" usually associated with Amiga output should be negligible, if not in fact invisible. Let's stop for a moment and consider the request so far, and what paths we should recognise as technical needs:

First the graphic itself. We have to find a way to duplicate the "copy" on the Amiga screen. To any experienced user, this calls for some form of digitisation. I chose the Epson Flatbed 600 scanner and *ADPro* software from ASDG. I've found that its ability to give me a nice clean black and white screen image that I could retouch was perfect for this job. Scanners give you better black and white results, in my estimation, than other kinds of digitisers. The fear of "jaggies" (could the medical term be "aliasomania"?) in the final result obviously made me choose the Amiga's Hi-Res mode. This was a two-colour job anyway, so Hi-Res two-colour was perfect.

DOING IT

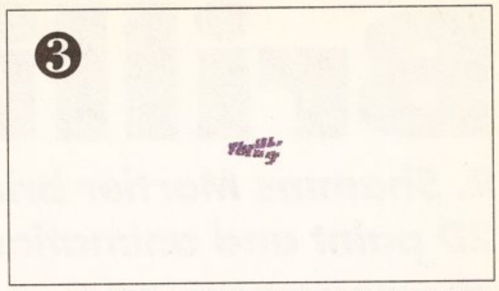
After scanning in the logo as deftly as possible, I was in need of accessing a paint program. I work with and own every paint program ever marketed for the Amiga, but the one that I get the most use out of continues to be Electronic Arts' excellent *DPaint*. I dislike tasks that require the use of too many pieces of software, though this is at times unavoidable. If I can produce the results I need with a modicum of disk swapping, then so much the better. For this project, *DPaint* would not only suffice graphically, but could generate the animation as well.

Once the scanned image was imported to the *DPaint* screen, I set out to clean it up. I redrew many of the lines of the image, and adjusted curves and diagonals until the jagginess was minimised. For two reasons I was not overly anxious that the jaggies remaining would be perceived: for one, moving images hide many anomalies that the image might suffer if it were a still image; and two, Broadcast TV (NTSC) has a resolution far less than the Amiga's Hi-Res RGB monitor. The "Thrifty" logo is also an extremely clean image, and renders very well to the medium of video.

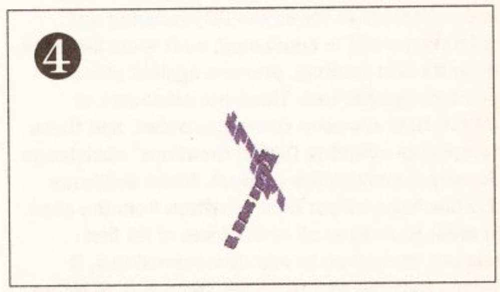
AND NOW, TO ANIMATE

If you take a look at the logo image (see top right on the previous page), you'll see that it is split in two by a horizontal space in the middle. Remembering the advice of my animation teacher many years ago, I was aware that animations need to possess original and unexpected choreography in order to establish their unique and memorable character. Even simple animations must move in ways that establish surprise, or the result is simple boredom. Instead of just spinning the logo up from the background, I decided to take a chance and answer the problem a bit more creatively. Taking advantage of the horizontal space that split the logo in two, I used the Move requester in *DPaint* to set one half of the logo spinning clockwise on the "Y" axis (the vertical axis), while the other turned in a counter-clockwise direction. The whole logo was first painted to the screen at about one third of its dimension, and allowed to sit there for about a second before any movement was created, which underlined the unexpected magic to come. The entire movement takes sixty frames, and is bookended by freezes of the stable image. It was easy to produce, and the simple lines of the image blended with the movements that were generated. All images have perceived "personalities" so that their movements would also coincide with the nature of their different personalities. Although I twisted the expected movement a bit, the overall effect did not interfere with the clean lines of the image itself.

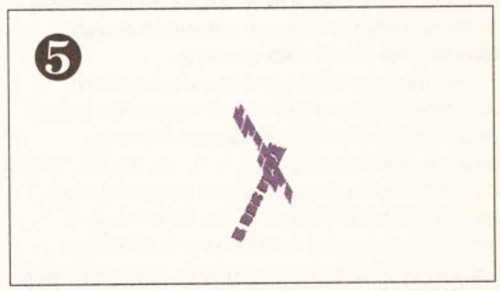
I produced a couple of variations for the client, which is a practice I suggest to all would-be-professional animators. At least that way they can see that you are offering more than one solution, and with the Amiga, animated variations take very little extra time. I took extra care to produce a quality end product. The result? The animation was purchased, edited into the final commercial, and set a promotional example for continued cooperation between myself and the Creative Director of the station for future projects. The Amiga also enjoyed a positive silhouette against the background of local broadcast TV, and many



Remembering the advice of my animation teacher years ago, I was aware that even simple animations had to move in surprising ways...



Instead of just spinning the logo up from the background, I decided to take a chance and answer the problem a bit more creatively...



Taking advantage of the horizontal space that split the logo in two, I used the Move Requester in DPaint to set the two halves spinning in different directions...

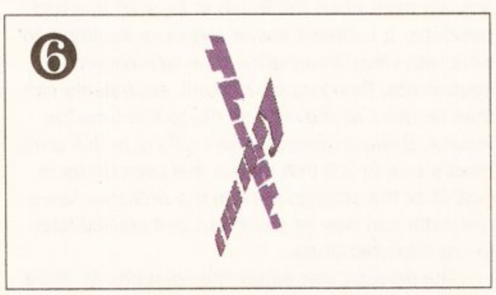
more projects have resulted from this small but vital success.

CONCLUSIONS

You should now be well on your way to creating your own spectacular and, perhaps more importantly, individual animations.

There are many other interesting animation techniques that you can use with *DPaint* as well as other Amiga software. We will be taking a good look at these in future issues of *Amiga Shopper*, so be sure to keep a close eye on each issue of the magazine.

Meanwhile, if you have discovered some useful new techniques that you would like me to share with the readers, please write to me in care of *Amiga Shopper*. AS



The logo was first painted to the screen at about one third of its dimension, and allowed to sit there for a second before any movement was created...



I twisted the expected movement a bit without it interfering with the clean lines of the image itself. The entire movement takes sixty frames...



And ends with the image you see here, which remains frozen for a short while before the animation finishes, for added effect.

Brilliance 2.0

R. Shamms Mortier brings you this exclusive review of Brilliance 2, the 2D paint and animation program that aims to topple Deluxe Paint.

Created to challenge *DPaint* – that's the pure and simple truth about *Brilliance*. Electronic Arts' *DPaint* software has a firm grip on the bank book of most of Amiga artists and animators as far as the 2D rendering and animation world is concerned, so it must be taken on in its own territory, process against process and tool against tool. There are attributes of *DPaint* that everyone complains about, and these complaints added to Digital Creations' decision to develop a competitive product. Since *Brilliance 2.0* has been 95 per cent rewritten from the start in order to redress all of the tools of its first release, as well as to add new capabilities, it seems that the way to speak about it is to relate its potential against that of its competition... *DPaint*. In doing that we will touch upon its new and unique capacities as well. Be warned, however, what I say here will have more meaning to those Amiga artists and animators already familiar with one or both products.

Brilliance is really two separate programs: *Brilliance* and *True-Brilliance*. *Brilliance* was written as a "register based" drawing and animation program, and will support 2, 4, 8, 16, 32, 64, 128, and 256 colours on-screen (excluding HAM mode graphics). *True-Brilliance*, on the other hand, is meant for those who want to work in HAM-6 (all Amigas) or HAM-8 (AGA machines). Users who work with 24-bit hardware will be especially pleased to work with *True-Brilliance*, since the screen is buffered by a 24-bit representation, and porting work to higher-end boards is quite possible with no loss of detail (15-bit saves are also possible). Since the AGA Amigas are capable of displaying near-24-bit graphics without the use of a dedicated (and somewhat expensive) 24-bit graphics boards, *True-Brilliance* should be the choice of AGA Amiga owners. *DPaint* was retrofitted to accomplish the same results, but *Brilliance* and *True-Brilliance* were designed from the start to address AGA machines as a first order priority. And there lies the difference. When a program is created from the ground up to do something, it usually does it better than one that was retrofitted for the same purpose. More attention is given to do things right in the first instance, while the motivation in the second instance is to capture a segment of the marketplace as quickly as possible.



Three sample frames from a 60 frame LightWave animation, imported into Brilliance 2.0 and...



...saved as HAM-8 screens. The lettering was rendered using the Brilliance Move Requester.

SO...WHAT'S NEW?

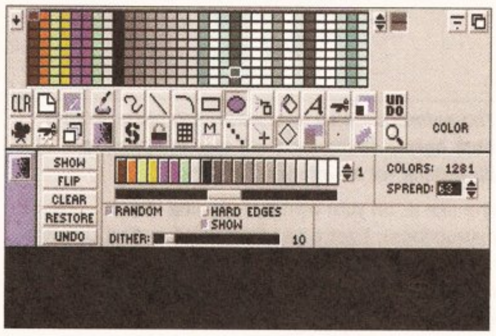
Most of what's new in the 2.0 version of *Brilliance* can't be seen to be appreciated, unless you compare the speed of routines and their non-bugginess. Most of the program has been completely rewritten to address user feedback and to remove anomalies from the 1.0 version. But we'll talk about speed later. Let's dwell for the moment upon appreciable new tools and processes.

Users of *Brilliance* know that they have the capacity to create paintings on separate pages. Pages that are next to each other (like page 1 and 2) can take advantage of the "RubThru" tool. The highest page (for example, page 1) can "show through" elements painted on page 2. This is very useful when applying a standard backdrop to animated frames. In 1.0, it was only possible to do this at full strength, so that a background sometimes interfered with the foreground image. With 2.0, it is now possible to do Rub-Thrus so that the second image is brought in with a user-selectable transparency level. This effectively ghosts out the background image, and applies what 3D animators call a "fog effect", so that the imagery remains distinct. I've experimented with this attribute by applying different transparency settings to a succession of rub-thru frames, with the result that the background seems to fade in or out at my discretion. This could also function as a neat transitional effect over live video.

Animators often use a technique called "pencil testing". This is accomplished by drawing the outlines of a character on separate sheets of paper, and manually flipping the paper to test a character's stance or emotive responses. *Brilliance 2.0* allows you to select any number of frames in its Animation Control Window to flip through in this manner. Now, even though you might have hundreds of frames in an on-screen animation, you can input any number you'd like and flip through just that number from your present screen. This is of great benefit to Amiga animators, and should allow for the refinement of animated segments.



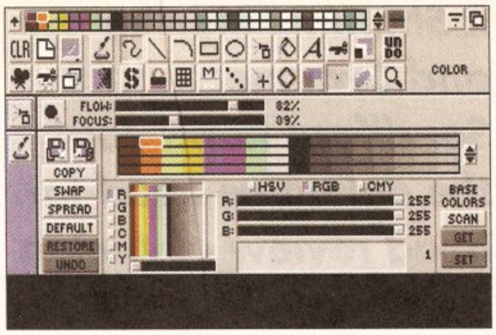
The result is simply stunning. If you want the best in Amiga painting and animation, this is it!



The Brilliance Gradient Fill Menu allows you to slide the mouse in the colour well, and insert a smooth range of colours from the palette.

Brilliance has one of the most extensive "Move requesters" around. It not only duplicates what the *DPaint* Move requester does, but gives the user more options and tools. Let's back up a little and describe briefly what a Move requester does. Any part of a screen may be picked up and saved as a "Brush". If you have a number of screens (say 30) set as an animation sequence, the Brush you saved can be brought in and painted down anywhere on frame 1. Then the Move requester is brought up. The Brush just painted down is selected as the target of all following Move requester operations. Within the Move requester are numeric indicators that allow you to say how far the Brush is to move on any axis (X, Y or Z) and how much it seems to rotate in relation to the X, Y or Z plane (remember that rotation in 2D programs is only simulated, since we are not working in real 3D space). The *DPaint* Move requester does this fine, giving you control over the Brushes' movement and rotation in all planes. The *Brilliance* Move requester, however, also adds a graphic way of accomplishing the same feat, by allowing you to actually paint down the Brush at its start and end positions. It's always easier and more desirable to work with visual information than with numeric equivalents. Besides, the numeric equivalents can then be used as they should be, to fine tune the results. *Brilliance* shines above *DPaint* in this area. What's new in 2.0 that makes this even better is that all of the settings used in the *Brilliance* Move requester can now be saved out and applied later to any imported Brush.

The process that allows the computer to figure out the intermediate frames of an animation from the starting/ending positions of a Brush is called "tweening". The tweening operations are initiated



Extensive airbrush controls and a full featured palette requester are other excellent Brilliance attributes for your convenience.

in the Move requesters of both *DPaint* and *Brilliance*, and are very different. In *DPaint*, each brush is drawn down in a finished way as each frame progresses. *Brilliance's* tweens are first computed through their movement cycle and then drawn down in a finished version. *Brilliance's* tweening routines are now twice as fast as they were in the 1.0 version of the software. In the AGA HAM-8 mode, they are noticeably faster than their *DPaint* counterparts (by a factor of 2 to 6 from my experiments). Also new to 2.0 is the addition of keystroke equivalents for all tweening operations.

Among other useful settings in the Move requester of both *DPaint* and *Brilliance* is "Trails" which allows you to add previously drawn images to the one being drawn presently, providing a visual *trail* that moves *behind* the animated image. In *DPaint*, the "Trail" setting initiates the immediate drawing of the animation. In *Brilliance*, this setting is checked as to use, and does not initiate immediate drawing, meaning that it can be mixed with other parameters before animation construction begins. *Brilliance* also allows you to set the number of frames that will trail along, so that by using "10" as that number in an animation of 90 frames, only the last ten will show as a trail. This provides the animator with more options than does the *DPaint* software.

Optional Format Saves – There are several new animation formats that are beginning to make headway against the standard ANIM5 format. *DPaint* supports just a couple: ANIM5 (also called "Op-5") and single frame saving. *Brilliance* offers a whole list of alternatives: Op-5, Op-8 (Word), Op-8 (Long), and single frames. True, not all of these are in full use yet, but when they become more standard, *Brilliance* will be ready. ANIM7, by the way, is not supported by Commodore, as there are several different forms of it floating around to confuse the issue.

Moving the Screen – It is often desirable to work in screen sizes that are many times the area of the viewable Amiga screen. This is true for professional animators, since the normal Amiga screen is too small to show sharp detail in an image that is to be translated to film and shown on a large theatre screen. For this reason, it is often necessary to move a picture around so that an area desirable for working on is in view. In *DPaint*, the way that this is done is very cumbersome. First, you go to a "Show Page" menu command, which shows the whole page in reduced size. Then you move a bounding box so that it outlines an area you want to go to, after which the Amiga screen displays that new area. If you make a mistake, you have to repeat the process again. Either that, or you can scroll the screen slowly with the Amiga keyboard's cursor control arrows.

New to *Brilliance 2.0* is a much better alternative. At any time during your painting session, you can interactively move the screen without accessing any menus. Just hold down the Shift key while hitting the "N" key. A click of your left mouse from here allows you to move the screen at will, while letting up on the mouse drops the screen in place. If you use the right mouse button instead, you can move the screen as many times as necessary. Clicking the left mouse drops it in place. I found this method to be very useful when manoeuvring around a large picture created in a 24-bit paint program whose normal output is to render very large pictures.

STUFF TOO LITTLE NOTICED ALL ALONG...

There are a number of items that you will notice no change in from the 1.0 version of the program. Most likely, they have been rewritten to be bugless and faster. Even if this weren't the case, however, they sport usages never pointed out in any previous comparative review. Let's look at four such items...

Gradient Wells – *Brilliance* has a tool that enables you to set the colours used in a "Gradient Fill", a type of fill that allows for a smooth range of colours from one to another. You simply click on a colour for each one needed, and place it at a distance from another colour in a range of positions on a gradient bar. What few, if any, Amiga *Brilliance* users know is that by holding the left mouse button down while you are doing this and sliding it along the gradient bar (in either direction), you paint all of the colours next to each other in the palette down in a consecutive fashion. Why is this important? When you paint flesh coloured features, you need a range of smooth transitioned colours in order to achieve a believable look. With *Brilliance's* drag-gradient feature, this is very easy.

Stenciling – *DPaint* offers the Amiga artist/animator a simple way to achieve stenciling. Stenciling, in case the term is new to you, is a way to "protect" colours, or colour ranges, in a painting from being painted over by other colours. *Brilliance's* stenciling operations are more complex and full featured, and include one method that not many Amiga users know about – lasso ranges. Normally, in a 16 colour painting, it's easy to select a colour from the screen that you want to stencil-protect and forge ahead. After all, with just a few colours, it's hard to go wrong. When the number of colours is in the thousands, however, as it is in a HAM-8 painting, stencil-protecting the right colour by merely selecting it can be a nightmare. There are too many colours, and the single choice method is too time consuming. Enter *Brilliance's* excellent Lasso method. By using this option, you just circle an area that contains the colours you want to protect. Those colours are automatically written to the protect buffer, and away you go. Certain effects are impossible without this tool.

Drawing under menu Bars – One personal irritation I have with *DPaint* is that it's impossible to have operations address parts of the screen hidden by menu bars, tool areas, or outside of the viewable parameters. This becomes especially problematic when one is using a larger than screen-size picture and attempting to fill it with a gradient of some sort. *Brilliance* has no such limitations, making gradient fills all the more attractive and useful. This is because *Brilliance's* menus are not part of the graphics screen as are those of *DPaint*. Painting takes place behind menu bars as well as (when desired) upon areas of the screen not in present view.

WISHES FOR BRILLIANCE 3.0

As I quick wish for the future, I would like to see automated JPEG file saving and loading added as well, though using the Heifner Communications software called *Pegger* works well at the moment. There is a tool in *DCTV Paint*, Digital Creations' other excellent paint package, called "Spiral" that would make an awesome addition to *Brilliance*. Because we are moving towards a time when the price of 24-bit graphics boards will be low enough for many more potential Amiga artists to experiment with, I would like to see *Brilliance* become a "retargetable" painting program (it would be nice to see it address the Toaster, Retina, FireCracker, Harlequin and other hardware in the short run) as soon as this becomes a reality supported by Commodore, where there is some kind of standard enforced in graphics boards. As an aside, I would like to see Amiga software piracy stopped in its tracks, so that Digital Creations are motivated to keep working on an already awesome creative tool for Amiga artists and animators, adding *Brilliance 3.0*, *4.0*, ad infinitum. AS

WHAT
***Brilliance 2.0* – UK price to be announced.**

WHO
Digital Creations
☎ 0101 916 344-4825

WHERE
Meridian
East House, East Road, London SW19 1AR ☎ 081 543 3500

CHECKOUT
PRODUCT NAME

Ease of UseFor beginners: 60%
For Experienced *DPaint* users: 85%
There is an expected learning curve associated with this software, though experienced *DPaint* users will have little trouble adjusting. Obviously, experienced *Brilliance 1.0* users will have no trouble at all.

Features: 90%
The only reason I'm not giving this software a 100% for features is because there is always room for improvement in this area.

Documentation: 95%
The *Brilliance* manual is very thorough and should greatly reduce the time needed to master the program with a little study.

Overall Speed of operations: 99%
Brilliance 2.0 is much faster than its 1.0 forebearer and there's no comparing it with *DPaint*.

Value for Money: 90%
DPaint IV AGA costs $199 US and *Brilliance 2.0* costs $249 US, but *Brilliance* is the better bargain because of features and speed. (UK prices to be announced).

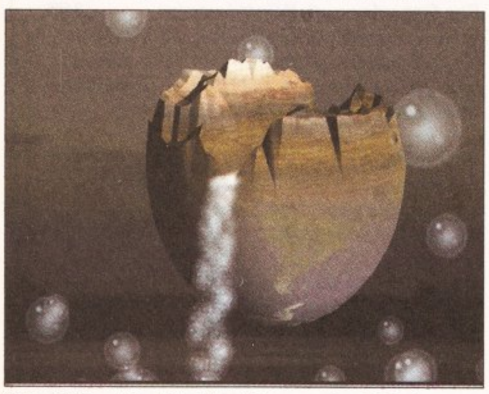
Overall rating 95%
If you want the best in Amiga 2D painting and animation, then select Brilliance from Digital Creations. Electronic Arts need to get back in the swing of things with a serious upgrade if they want to catch up.

Take your animations into the third dimension

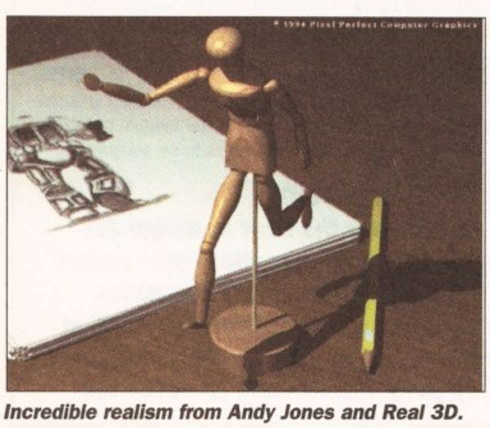
R Shamms Mortier and Graeme Sandiford hand you the definitive head-to-head review of Amiga 3D animation packages, with in-depth examinations of the latest versions of Aladdin 4D, Real 3D, and the LightWave/ LightRave combination released for the UK.



Space action by John Allardice with LightWave.



"WorldView" by Aladdin 4D's creator G Gorby.



Incredible realism from Andy Jones and Real 3D.

With all the hype surrounding Amiga 3D, how do you know which program is the best and, more importantly, what you can do with it? R Shamms Mortier and Graeme Sandiford give you the benefit of their experience and personal preferences. They will be taking a look at three state-of-the-art rendering systems. *Real 3D* has long been a favourite among Amiga-users, but how does version 2.4 shape up? You may not even have heard of *Aladdin 4D*, but it's one of the most popular systems in the US. What about *LightWave*? Is it really as good as all that? With the arrival of the PAL version of the *LightRave/LightWave* combination, here's your chance to find out!

R Shamms Mortier: As a professional designer and animator who works in an all Amiga studio environment, I use three main pieces of 3D/4D software: *Aladdin-4D*, *LightWave*, and *Caligari Broadcast*. Two of these programs (*A4D* and *LightWave*) are covered in this issue of *Amiga Shopper*. I am very particular about what software I use in my work because my livelihood is involved, so the software has to provide me with all of the needed tools as well as a crash-proof guarantee, so when I laud a package for whatever reason, it's because my mortgage is thankful as well as my creative intentions. I have used each of the packages that I mentioned above since their inception, and know them well. I have also tested *R3D2* extensively since its release, though I do not use it in my work. The 3D software I use most these days is *A4D*, especially since the release of 3.0 (and now 3.2).

Graeme Sandiford:
As a hobbyist, I want a package that is easy to use and to get to grips with when it comes to 3D modelling and raytracing. I want the rendered image to appear as I expect it to, but I also want enough flexibility to create images that are as realistic or unrealistic as I want them to be.

As my mortgage doesn't rely on the package I purchase, I don't want to spend too much, especially for functions I may never use. As I am not as well acquainted with *A4D* as Shamms, my comments will be based mainly on *LightWave* and *Real 3D 2.4*.

A GOOD WORKMAN ALWAYS USES HIS TOOLS

A good point to bear in mind when selecting software is that no matter how many tools a program may have, they are no good if they are inaccessible.

A4D has two main types of tools – Internal and External tools. Internal tools are internal to the software and are represented by visual icons in the *A4D* toolbox. They include all of the normal operations like screen centring, sizing the viewscreen, undo operations, showing/hiding objects, B-Spline drawing, and similar functions. The use of the term "External Tool" indicates a tool that is actually based in a program outside of *A4D*, and opens the way for the creation and distribution of an unlimited number of new tools in the future.

Some of these External Tools have been moved from their previous placement from within *A4D*, and are represented in a "Named Tool List". Added to all of the external tools is a togglable help screen (accessed by an "About" gadget) that describes in great detail what a tool does and how it does it. New to 3.2 is an easy-click method of moving selected, and often used tools to the top of the list where they do not scroll, and are saved for the next *A4D* rendering session.

LightWave uses what are called "macros" to accomplish the same thing, but not with the same invitation to other developers to get involved. Creating a *LightWave* macro is a complicated process – as there is little in the way of support, you are unlikely to find many in the PD sector. However, the commercial macro collections are extremely impressive – take a look at our review of Power Macros on page 32 for an idea of their quality. *LightWave*'s tools are available from buttons or requesters. While there is no on-line help, you can view a list of keyboard-short-cuts by pressing the Help key.

Real 3D has really improved its interface. It's almost completely user-configurable. You can open any number of windows of any description. Not only

can you open view windows, you can open several tool windows. *RD2's* tools appear much the same as *A4D's*, as icons. There is an icon for each type of tool, such as visible structures, modifiers and Booleans. When you click on an icon further, more specific, icons appear. The functions represented by this icons can also be accessed from pull-down menus. However, this can be extremely confusing for beginners.

NATURAL LOOKING CURVES

To produce truly smooth surfaces, most 3D packages use curved lines called B-Splines. As most programs use polygons to create 3D-structures, their surfaces are always faceted. Usually, these polygons are small enough to appear smooth, but if you zoom in closely enough, they lose this appearance. No matter how close you are to a B-Spline, it will always appear smooth. The down side to this is that scenes that contain B-Splines take much longer to render.

A4D 3.2 can be used to design shapes using B-Splines, leading to the sculpting of more organic looking 3D shapes. However, the actual rendering is still accomplished by targeting polygonal surfaces, and for that *A4D* has a special SPOTOPOL tool. A new freehand spline gadget, as well as a companion freehand poly gadget, appear on the *A4D* main editor screen.

The SPOTOPOL tool brings up a requester that enables you to determine the resolution of the polygon the spline will be converted into (its smoothness as determined by a set number of points), and the angle (a minimum angle between the sides of the polygon). If the tool is used to refit a spline to a poly, there are tolerances that can be set that address the "fit" of the result. As a visual reference, the manual contains a number of specific poly/spline examples.

A4D has always had the capacity to input splined drawings created with other Amiga software as well as from EPS (Encapsulated PostScript) files saved out from other packages. All of this is still possible, but now, in addition, you can create those smooth shapes right in *A4D*, transform them into a smooth polygonal surface, and then create extruded or swept (lathed) 3D shapes. This gives you the possibility to import EPS fonts and drawings as outlines, and convert the vectored shapes to smooth polygonal shapes with far less points then the original imported shape, all within the program.

LightWave uses splines in a similar manner to *A4D*. You can use them to describe a shape, but the actual rendering calculations are performed on polygons. This makes for quicker rendering times and still produces smooth surfaces. *LightWave* uses its Sketch tool to create curves. As the name suggests, you use this tool to sketch an outline. The program then uses as few points as possible to create a "natural" curve. With *LightWave* you can go one step further to create a spline-patch. A spline-patch is basically a mesh that consists of curved lines. In order to create one you need to draw several spline-curves. This operation is a bit like drawing a profile; you build up the object slice by slice. The program will automatically calculate the curves necessary to create a smooth 3D object.

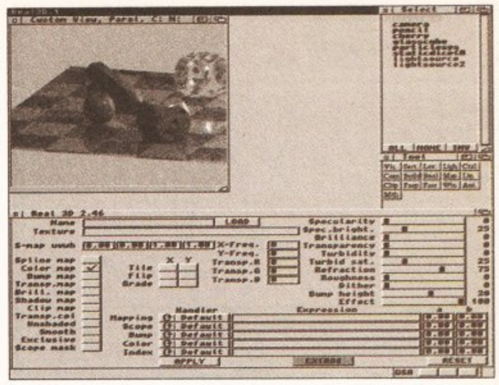
R3D is the only program that fully implements B-Splines. The rendered surfaces are truly curved, without any sign of facets. As a result, rendering times are increased horrendously. Splines are best used when you are trying to model organic shapes, otherwise you will soon find yourself running out of memory, as well as waiting forever. *R3D's* spline-patches are also superior, and these spline-based objects also have an advantage when it comes to adding textures. This will be explained later on.

"As my mortgage doesn't rely on the package I purchase, I don't want to spend too much."

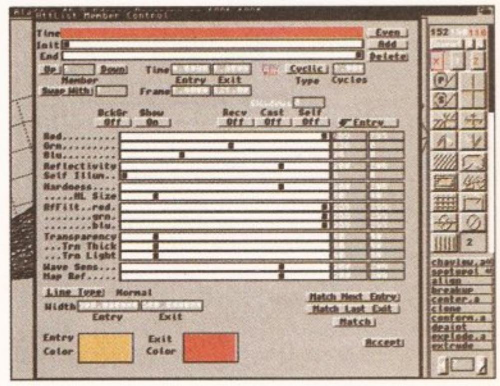
BEAUTIFULLY DEFORMED OBJECTS

To achieve truly organic shapes it is sometimes necessary to deform objects. This doesn't involve anything unpleasant; it's just a way of changing the shape in a more natural manner. This usually involves the pulling, squeezing, resizing and twisting of objects.

Conform is a new process of *A4D* that allows you to deform any selected polys to a pre-drawn splined shape. A Conform Default window can be opened, and in it are several parameters to set, including "scaling" and "power" functions and a radial setting. The real magic takes place when you access this tool with the left mouse-button which makes its operation completely interactive. You can actually see the selected shape conforming itself to the splined shape creating a totally new shape. What are some of its uses? With a little practice you could deform a sphere into a shape that could be used as the basic structure for a sculpted 3D human head, or another pseudo-organic structure. By the fact that you can see all of this happening in front of your eyes, the process is made very intuitive.



Real 3D has a comprehensive attributes requester. Of the three programs tested, it is the only one that can handle Spline-mapping.



This is A4D's Attributes List Requester where such niceties as reflection, hardness, colour and other object attributes are targeted.

LightWave has a host of powerful tools for manipulating the shape of objects. You can stretch, shear, twist, taper and bend objects. You can also place virtual magnets and vortices to deform objects around defined points. As all of these operations take place in real-time, you receive instant feedback on how your object's shape is changing. The Vortex deformation is my particular favourite, the best way of describing how it works is comparing it with a black hole. It draws surfaces to its centre in a manner much the same as that of a spiral.

R3D makes use of a variety of bending methods. Its bend function has a number of variations; for example, you can Bend Ends, Local Points, Bend-and-Move and Bend-and-Size. At first these may sound pretty similar, but they all deform objects in almost profoundly different ways. For example, a global bend will bend an object as a whole, end point will move one end, bend and move will move a section to a side and bend its surface.

A ROOM WITH AN INTERACTIVE VIEW

Having an interactive view can really make navigating a scene much easier and intuitive. This type of interface allows the user to move through all three dimensions by using mouse movements.

In *A4D* this is known as Interactive Rotation of the View – this represents an upgrading View Rotation. In addition to being able to use the Number Pad keys to rotate the view screen around selected axis, an interactive option that places a bounding box around objects on the screen now enables you to rotate the view interactively. First you click on the "ChaView" (change view) tool in the external tools listing. All polys are then boxed

JARGON BUSTING

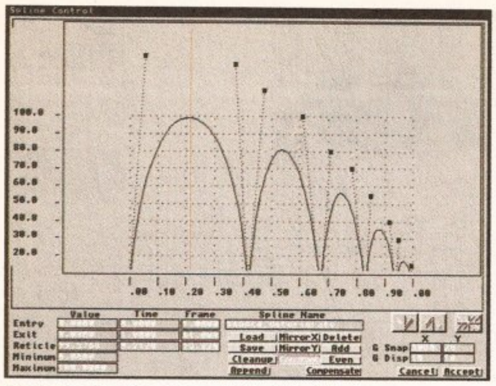
3D software – any software that enables you to design objects that appear to exist and behave in all three spatial dimensions. The term "4D" can also be used to indicate that the 3D object's shape, position or size can be animated over time.

Splines – B-Splines are closed surfaces that can be shaped into smooth curves. C-Splines are "Control" Splines, lines that control various animation possibilities like acceleration and the degree to which an attribute of an object changes over time.

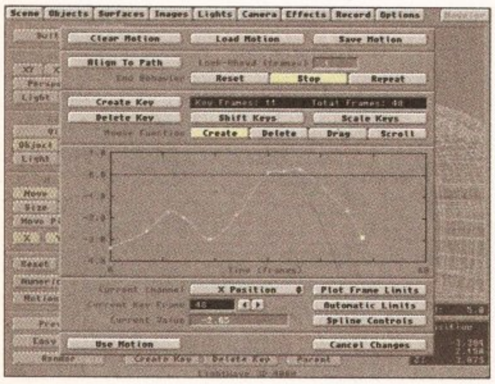
Vector – a Vector is a line indicating a direction in space. Unlike Splines, these can only be straight lines – not curves.

Alpha Channel – this is a transparency effect that allows the seamless placing of a foreground or background image.

External/Internal Tool – "Internal" means a tool that is included in the software, while "External" indicates a tool that can be added in later, even from a separate programmer outside of the A4D organisation.



Every major function of Aladdin 4D, its acceleration, deceleration and texture mapping, can be controlled through dedicated CSplines.



Most of LightWave's major functions that can be varied over time can be controlled by Envelopes. Envelopes are actually splines.

according to their "group number". Holding down the mouse button will move the view on any axis, adding the shift key will zoom in or out, or adding the alternate key (Alt) alone will move the view from side to side, or up and down. Added to all of this is a new togglable perspective grid akin to that in *Caligari* and *LightWave* that gives you a reference for movements of all objects.

From within *LightWave's* Layout module you can edit its perspective view just as you would an object or light. Once you are in Edit View mode, you can move around using a combination of left and right-mouse buttons. If you require more accurate positioning, you can enter positions numerically. This is also true when it comes to positioning lights, bones and the camera.

As mentioned before, *R3D* can open a number of custom views. Unfortunately, none of them are truly interactive, although you can alter the views with the cursor keys and various combinations of other keys.

PRIMITIVE SPECIES

In 3D software terms, primitives are simple objects such as spheres etc. They are usually available in the form of a library, or as an internal part of a program.

R3D has one of the best collections of primitive objects I've encountered on an Amiga. It has Polyhedrons, Polymids, Cut-Polymids, Rectangles, Cubes, Cut and Uncut-Pyramids, Regular Polygons, Regular Polymids, Spheres, Ellipsoids, Ellipsegments, Cut and Uncut-Hyperboli – the list goes on. *R3D's* primitives are built in so it would be difficult to expand the current selection, although there are more than enough for most people's needs.

A4D offers you the opportunity to tap into a primitive library to add pre-structured primitive objects, but the primitives are very limited in quantity and scope. *A4D* gives you two separate Primitive generation menus. The first is called "Platonic Primitives" (Icosahedron, Dodecahedron, Octahedron, and Tetrahedron). As this tool is upgraded through new modular releases, other Platonic solids will be added. The second Primitive menu involves the creation of Quadratic Primitives (Ellipsoid, Hyperboloid of one sheet, Hyperboloid of two sheets, Torus, Elliptic Cone, and an Elliptic Hyperboloid).

LightWave's range of primitives is woefully inadequate. There are only four objects: a Ball, Box, Cone and a Disk. If it were not for the program's excellent deformation tools, this would seriously limit the modeller's usefulness.

THE PATH TO ENLIGHTENMENT

Extruding flat surfaces can be an excellent way of producing symmetrical shapes, but extruding surfaces along a path can produce incredibly complicated objects. It can also save time and effort when trying to model tricky, but roughly symmetrical, shapes.

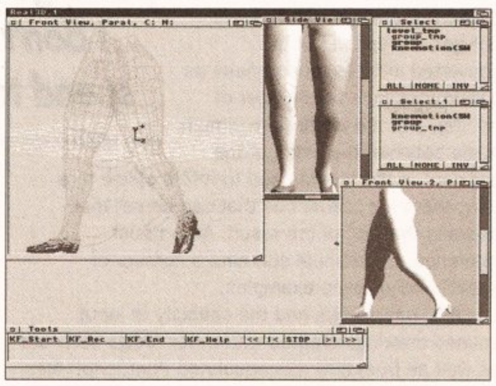
LightWave has some pretty impressive extrusion tools. You can even extrude a surface along two paths, or along what *LightWave* calls rails. You can enter sensitivity values for how closely the object will follow these paths.

R3D has extrusion, but cunningly calls it either a Coplanar or Orthogonal sweep. To use a Coplanar sweep, you first need to draw a line which then becomes the profile curve. Then you draw another line which becomes the sweeping curve. Once both curves have been defined you can "sweep" the profile curve along the sweeping curve. Orthagonal sweeping is closer to the traditional method of extrusion along a path. This time you can create a surface such as a disc and then "sweep" it along a curve.

A4D's Path Extrusion tool has some extensive new capabilities not found in earlier versions. Used in combination with the spline drawing tools, the most intricate curved paths can now be created with ease and turned into objects. Looped wires and cables, curving railings for stairways, twisted hanging vines, and more are now easy to generate by using this exquisite new *A4D* tool. You can rotate and resize all elements with C-Splines (Control Splines).

A4D's Instancing tool replicates selected polygons (2D or 3D objects) along a path so that you can easily create animated effects like snakes and other undulating elements that automatically follow each other at user definable distances (spaced out in grids or along a path). For example, make just one walking figure and wind up with a whole crowd! The grouped figures need not walk in unison either, but can move to their own specified and timed drummer. By setting the angle of rotation of instances you can make perfect rotational clones around a central point, like flower petals opening and closing. You can use one polygon to create an entire multi-polygonal object in this manner.

While you can perform the same tasks in *R3D*, and perhaps with a little more power and versatility, it is horrendously difficult to do. This is rather unfortunate, as the *R3D* animation system, and indeed the program in general, is capable of producing some spectacular feats, but it is rarely worth the effort you need to expend grappling with the manual.



Here's Real 3D's excellent animation system in action. The Splines, located at the knees and ankles, define the walking-motion of the legs.

TWINKLE, TWINKLE

There seems to be something of a lens flare bonanza sweeping through the 3D rendering world. The digital lens flare produces the same effect as its photographic equivalent. It makes intense sources of light flare up, producing a halo-like image. However, *R3D* has missed the boat on this currently popular feature.

LightWave's LensFlare option is calculated mathematically; you just enter a few values, select a few options, and away you go. You can set all sorts of options to achieve the look you want. You can change the colour of the flare, and whether it will fade behind objects or in fog. You can also create central glows or random streaks, and there are plenty of other options as well. You can even add a control envelope as you can with most of the Layout module's functions. So you can animate the flare's intensity over time easily and with a great deal of control. You can actually emulate the changes in intensity you might expect from a rising

JARGON BUSTING

Attach Point – in A4D, this refers to a selected point on a polygon that becomes the targeted centre of specific actions.

Behavioural Animation – each object in an animation is given set patterns of behaviour, such as movement, attraction or repulsion. Objects with behaviours could include such things as a fly's beating wings or a spinning top.

Bump Map – translates the colour values of a file into the appearance of different elevations.

Collision Detection - the recognition of the collision of objects and application of realistic effects to them.

Extrude - to turn a 2D (flat) object into a 3D one by increasing its depth. Some programs can extrude objects along a path, with options of scaling the object or even twisting it. This technique can be used produce hard-to-model objects such as wires,

Gouraud Shading - a rendering method that smoothes out the differences in intensity of polygons.

or setting sun, or a flashing light.

In *A4D*, flares are not algorithmic, meaning that their generation is not mathematically automatic. To make them appear in a scene, you must first design their "look" in a paint program, or import them from an included *A4D* library. What they add is variability. *A4D's* lens flares take their look from bitmaps (including animated ones) targeted to them. They can be composited, meaning layered on top of one another, leading to all sorts of effects. You merely construct a picture or brush you like in a paint program and then import it as a lens flare image. This may seem a little time consuming, but, because they use bitmap lists (texture lists), they can take on all of the associated features: transparency, strength, colour levels, offset positions, flipping, and so on.

CATCHING THE WAVE

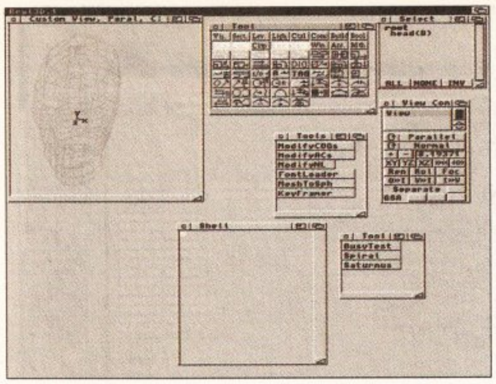
One of the most impressive (and one of the hardest to create) 3D-effects are waves. Still images are impressive enough, but when they are in motion they can appear truly stunning.

A4D's Mechanical waves move the points on a polygonal object's surface so you can create true 3D rippling surfaces (ocean waves, waving flags, and an endless series of unexpected animated deformations). With the opening of a new "Wave" window, you can appreciate the complexity of this tool. You can animate the polygonal surface by displacing any axis along another axis by set frequencies, phases, ranges and angles. This is not a tool you can begin to appreciate through verbal description without some dedicated experimentation. *A4D* accomplishes this process with ease, while some packages struggle with it.

R3D can create waves in pretty much the same way as *A4D*. Its most simple form of waves is a radial wave. This is generated from a single primitive and produces a waterdrop effect. You can also define the shape of several waves on a number of primitives; this will produce a sea-like series of waves. A third type of wave that can be created is Parallel Waves. This is best described as the sort of wave you get when you shake one end of a sheet, the wave travels in a single direction.

Thanks to *R3D's* excellent if a little confusing particle animation, you can apply a wave animation to several objects. The wave will start at the first line of objects and then move along, displacing each object as it goes.

LightWave doesn't support "real waves" as a individual function, but what it *can* do is apply its built-in algorithmic wave texture as a bump map. However, this will not physically alter the shape of the object; its polygonal-structure. This can be achieved by using one of *LightWave's* unique tools – displacement mapping. Displacement mapping is similar to most other forms of texture mapping, but instead of altering a surface's luminosity, elevation or colour, it will physically change an object's surface to match the map. You can therefore use the same built-in wave map to create wave-like structures. However, this can make animating the surface a little more cumbersome. This still remains a powerful tool in *Lightwave's* arsenal of tools and goes some way to making up for its other modelling deficiencies. To make effective use of



Real 3D's display may appear confusing, but its up to you which windows you have open. You can even open several windows of the same kind.

displacement mapping you will need to make sure you have enough polygons for the map to work with, otherwise you can get some pretty *unpredictable* results.

ANIMATION

Fountain is the name of *A4D's* new particle animation system, and it is difficult to praise it too highly. Looking at the picture on the first page of this review will probably give you some idea of its complexity. Without any hesitation on my part, I can state that it is, when it comes to handling gases, the most extensive and full-featured of any particle animation system in use today, except perhaps on the very, very expensive high-end machines.

> **"As a professional, I don't want my animations to look like anyone else's – and neither do my clients."**

Particle animation allows you to create animated organic effects like flowing water and gases, and because *A4D's* Fountain is based upon texture mapping as well, the effects possible are limitless and potentially bounded only by the creative instincts of each user. Look for non-Amiga expensive software to study this closely, and attempt to emulate it in the near future.

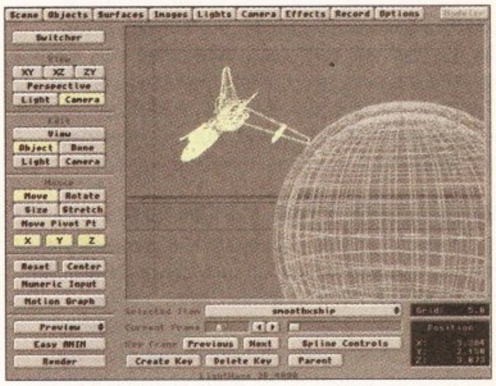
While *R3D's* animation features are as powerful as *A4D's*, they just can begin to compare with *A4D's* gas and liquid effects. Where it really excels is in its dynamic abilities. These include: inverse kinematics, collision detection, skeletonal control and behavioural animations. Because of *R3D's* hierarchical animation construction, you can apply animation actions to object levels, regardless of how many objects are under that level. This removes the need to apply the same technique to each object individually. Skeletonal control can facilitate the movement of complex objects using simpler ones. The bones (the simplified representation of objects) can be used to control several objects to produce naturally moving objects. Collision detection informs the computer of the collision of objects so it can calculate how their paths will need to be adjusted. A good example of this is the balls on a pool table – in order to animate them realistically, you have to make sure that the balls don't pass through each other or the table's sides. In short, these and other tools can be used to create a virtual universe with its own physical laws and forces. As an example you could create a ground, cover it with leaves, create a gravitational force, construct a car, and attach a wind-like force. When you animate this scene, the car could drive past the leaves, blowing them into the air; the leaves would then float back down to the ground.

Unfortunately for *LightWave*-users, the program does not have direct support for particle animation. You can purchase third-party systems which, however, are far from cheap. Despite this inadequacy, *LightWave* can be used to produce some dramatic animations. Its strong point being motion picture-sweeping shots, hence its popularity with film makers. *LightWave's* animation system is extremely easy to use. Like *A4D*, and now *R3D*, it works on a key-frame basis. This can obviously save a lot of time and effort, as the computer works out the positions of objects between the key-frames necessary to create the illusion of smooth motion. Keeping track of objects is both intuitive and flexible. Another neat feature is that it can set both lights and the camera to track the movement of an object. This can really liven up scenes which have a single moving object, such as a car or spaceship.

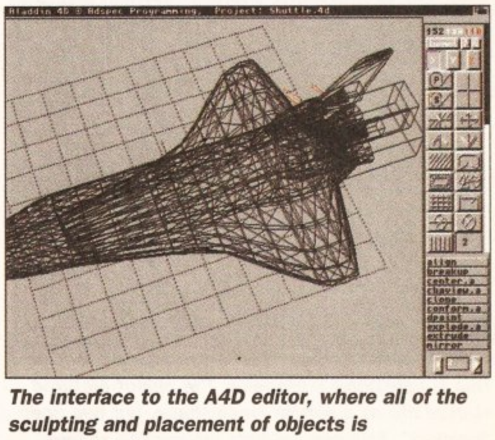
THE CUTTING EDGE

One of *R3D's* strong points that it has had from its first version is Boolean operators. Most 3D packages use objects and surfaces to cut or add to other objects' shape, but *R3D's* operators are among the best. Despite this fact, you will need to have a reasonable understanding of how the different functions work, or be prepared to experiment a lot.

LightWave also has its fair share of cutting tools. As well as the standard Boolean tools, you can drill, merge, weld and jitter objects. *LightWave*'s jitter function is pretty much unique, and is handy for modelling naturally irregular objects. The idea is quite simple, you select several polygons and enter a value and direction you want *LightWave* to randomly shift them, but the



This is LightWave's Layout editor. Objects can be imported and exported to and from the Modeler. As the view is interactive, it's easy to navigate.



The interface to the A4D editor, where all of the sculpting and placement of objects is accomplished.

results can be quite convincing. *LightWave*'s tools are easier to use than *R3D's* but *A4D* has a new trick up its sleeve.

LOScut is a brand new polygon 3D "cutting" system, much easier to use than either *LightWave*'s Boolean operators or *R3D2's* complex cutters. With *A4D's* LOScut (Line-Of-Sight cutter), you can easily sculpt away at a 3D surface as if it was a piece of granite. The next upgrade (due in the newsletter in July) will add a "Driller." The LOScut and Driller can be any shape desired, so very complex objects can be produced.

BEING IN CONTROL

One of the best ways of making changes to a scene is to implement control splines. In *LightWave* you can control most objects, including lights and the camera, with what it calls envelopes. You control changes in direction and velocity, morphing rates and light intensity.

R3D's control splines are some of the best available, although you can't control as many program features as *LightWave*.

A4D's Control Splines (C-Splines) are more variable than those in *LightWave*, and replace the ease-in/ease-out and delays that are used in other programs, including previous versions of *Aladdin*. Any temporal aspect that can be used during an animation is now controllable by C-Splines. C-Splines can be loaded and saved to disk, and the program comes with a ready-to-incorporate listing of several.

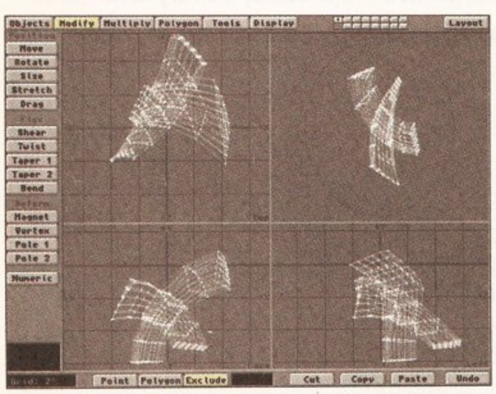
INTERFACE DESIGN

A4D and *LightWave* have very similar interfaces, and the LightRave option adds a simple to understand menu affair. *R3D2's* interface is most difficult for novices to master, because of its extensive use of hierarchical menus, icons and tool lists.

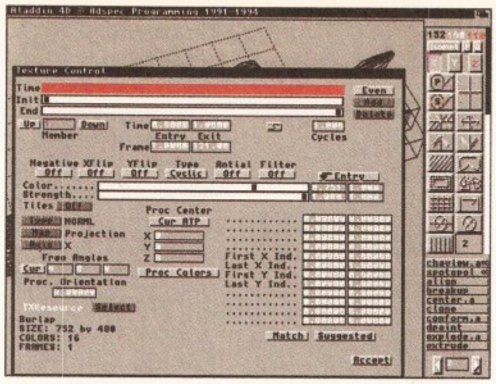
LightWave is the easiest system for novice users to get accustomed to, but from there the learning curve is very steep. *A4D* takes a bit more time for the beginner, but is simpler to master from that point forward. Just like *A4D*, *R3D2* has a steep learning curve from the start, but more complex possibilities require even more learning time.

GETTING THE PICTURE

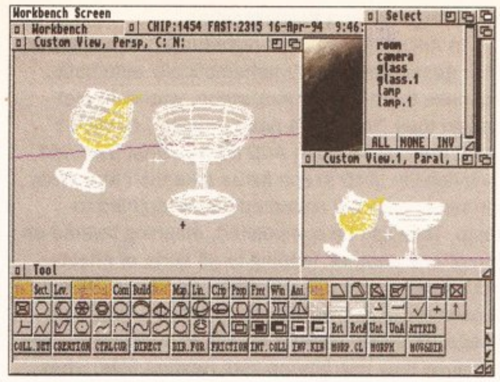
Rendering times are effected by the complexity of objects and whether or not such things as shadows are called for. From my experiments, similar scenes rendered fastest on *A4D* and *LightWave*, with *R3D2* coming in after that. Both *LightWave* and *R3D* can output 32-Bit alpha channel renders. *A4D* renders at about twice the speed of *LightWave* in most circumstances, but in all fairness it must be mentioned that, *A4D* does not perform real Ray Tracing at this time. *R3D2* can take very long to render each frame unless you are very careful about how you configure your scenes and the render options.



This is lightWave's Modeler. The object pictured started life as a simple cross-shape, but has been "twisted". This can produce interesting shapes.



There is no other Amiga program, that can match A4D's texture options. For example, the textures can be animated as well.



Real 3D has an incredible range of powerful tools. Thanks to the user-definable interface, they can be arranged to suit the user's taste.

JARGON BUSTING

Inverse Kinematics - calculates then positions of linked objects when one is moved.

Object – a 3D representation of an object, consisting of several polygons or spline-curves.

Particle System – control of group of particles (objects), like leaves, with an external force such as wind.

Phong Shading – similar to Gouraud Shading but works on pixels instead of polygons.

Polygon – mathematical description of a of shape with several sides.

Primitive – a relatively simple 3D object, that is normally used as a 'building block' for more complicated ones.

Raytracing – a method of rendering that follows each theoretical ray of light through the 3D scene back to your eye.

Skeletonal Control – controlling the movement of complicated objects by manipulating simplistic representations.

There are several options that can be used to improve how a scene will appear when rendered. Both *R3D* and *Lightwave* can produce soft shadows. Soft shadows are more realistic as they appear slightly fuzzy around their perimeters, rather than clean and sharp.

When a real-life object is photographed while in motion, its edges will appear blurred. Again, both *R3D* and *LightWave* support this feature; *LightWave* has a particle blur which stops textures from appearing pixelated when close to the camera.

> **"Lightwave is the easiest system for novice users to get accustomed to, but from there the learning curve is steep."**

Another feature that *A4D* lacks is depth of field rendering. This feature will render objects outside a certain depth as slightly fuzzy. However, where *A4D* gets its own back is with fog and gas effects. While all three programs have varying degrees of control over fog effects, *A4D* is unmatched in the gas effects it can produce.

R3D was designed from the start to handle mechanical objects, even to the extent of having a built in "pricing" option that targets objects as parts on a production line. It can be used to achieve excellent mechanical looks. *LightWave*'s animations are becoming legendary as far as their use in Hollywood are concerned. Professional *LightWave* animations are very "clean", and have a *LightWave* "look". *A4D* animations and renderings bear the stamp of the artist that designed them, and have far more possible variability as a result of the "open-endedness" of the tools.

EXPANDABILITY

LightWave is expandable through ARexx scripting, as is *R3D2*. *A4D* and *R3D* are expandable through conscious tool interface design, and new tools and render modules can be added much more often from many sources, although thse sources are mainly limited to America.

LightRave, the front end for PAL *LightWave* users, enables you to import and export a number of 3D object file formats, greatly enhancing the *LightWave* software and usability. The LightRave addition that makes PAL use possible also enabless you to configure ANIM5 animations directly from *LightWave* animated scene renders, and includes previews on several Amiga graphics boards as well as DCTV. *LightWave* itself has the capacity to import several of the top 3D object file formats as well as Postscript fonts.

R3D2 is meant to render only single frames in 24-bit, and addresses only the *R3D* format or the AutoCAD object format. *A4D* can import/export VideoScape format objects so that it can easily interface with *LightWave*/LightRave.

A4D can also import the 3D DEM (Digital Elevation Model) files used by *Scenery Animator*, as well as EPS Postscript objects. It can write to several graphics boards (among which are OpalVision and Retina), as well as DCTV.

TEXTURE MAPPING

R3D2's texture mapping routines can be found to be extremely difficult and confusing. *LightWave's* can be mastered with a good amount of study, but are full-featured. *A4D's* texture mapping, however, is the best in terms of ease of learning, layering and animating. All of the programs support alternative application methods such as bump mapping, reflection mapping, alpha channel mapping, luma mapping, transparency mapping and more. As mentioned before *LightWave* is the only package that supports displacement maps. *R3D* also has a unique mapping technique – spline mapping. This differs from ordinary texture mapping as the texture is mapped attached to the objects shape in a flexible manner. When the object is altered, by a Boolean operation or deformation for example, the texture is also transformed.

DOCUMENTATION

Good software should be accompanied by documentation that doesn't have to be referenced at every turn. The *LightWave* documentation is sufficient to get you started with simple tasks, but makes no attempt to push the envelope of your learning past that point, leaving it to experimentation and the magazine tutorials. *R3D2's* complicated interface almost defeats its documentation's ability to make learning painless. To use *R3D2* you have to reference the docs constantly. *A4D's* documentation is enhanced by new pages added with each upgrade plus the tutorials included in the newsletter.

R3D2 has no newsletter. *LightWave* has two dedicated magazines that provide a steady stream of useful information to the user. *A4D* has a quarterly newsletter that offers not only verbal information, but upgrades, textures, objects, and fonts on disk.

UPGRADES

LightWave upgrades come about once or twice a year. Major upgrades are costly, while minor ones are free. I'm not sure how often *R3D2* upgrades come, as I haven't received any news of one in many months. *A4D* upgrades often come as an addendum to the newsletter. The "Fountain" process, for instance (which could easily sell as a separate utility for $500 plus) came free with the newsletter upgrade! Each newsletter contains at least a minor, and many time a major, upgrade to the software.

The best news of all for the future development of *A4D* – it is now modular, which means that new tools can be added as they are developed and literally plugged into the interface. Some of these modular tools are already being developed for distribution on ADSPEC's *Aladdin's Lamp* newsletter disk. A programmer's development kit is available to owners of the program at no extra cost to promote the development of customised tools.

There is already a developer, T M Shead, who is releasing a package called *Genie Tools*, a collection of more than a dozen *A4D* tools at only $24.95 US. There is a Deform mapper that will allow you to sculpt 3D sheets by reading the luma (light/darkness settings) of an IFF Bitmap.

THE VERDICTS

Shamms:

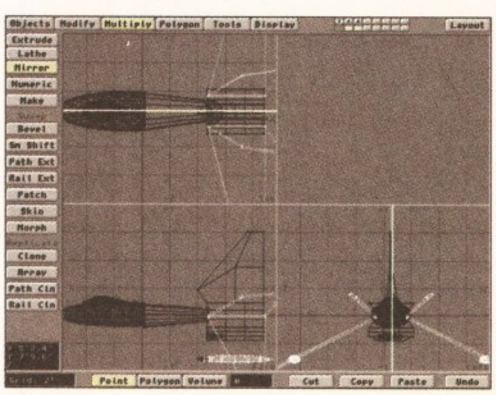
As a professional, I do not want my animations to look like anyone else's, and neither do my clients. *A4D's* animations can be tailored to any artistic signature, with *R3D2's* coming in second. I can spot a *LightWave* animation a mile away, though this seems not to bother many users.

I am not only impressed with *A4D* (I plan to use it to design and animate my client's projects), but I am also amazed at the depth and price of each of the quarterly newsletters. Each comes with a disk full of tutorials, objects, animations, textures, and fonts... for around £25 a year. The upgrade cost for previous *A4D* owners (2.0, 2.1, or 2.3) to 3.0 is only £65, and the 3.2 version is free to all 3.0 registered users. Previous owners of the *Draw-4D* series should call ADSPEC for pricing details. You can also upgrade from any other Amiga program for £160. New users are asked to pay an approximate retail price of £235 for software.

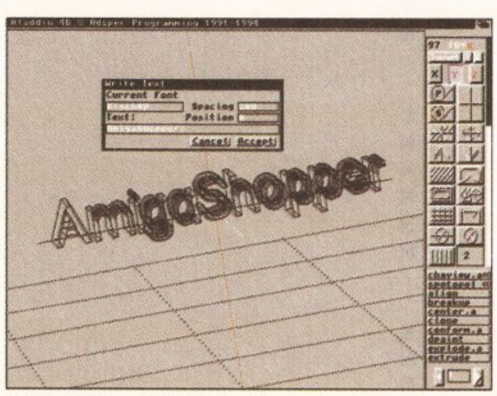
Graeme:

I must say I agree, to a certain extent, with Shamms' observations on some of *A4D's* outstanding features, especially Fountain. However, it must be said that the average enthusiast is probably less concerned with how distinctive his images will appear, than how good they will appear. It is certainly easier to create stunningly brilliant animations with *LightWave*. However, while a hobbyist would certainly find *LightWave* easier to use, he or she would almost certainly be inhibited by *LightWave*'s price.

I would personally recommend *LightWave* as the best all round 3D program. But, because of its price it may be worthwhile buying *A4D*, and then spending the extra time needed to get the best out of it. *A4D* is certainly a powerful tool, and it's a shame that more people in Europe haven't taken the time to get to grips with its quirky interface. So in short, buy *LightWave* if you can afford it; if you can't, buy *A4D*; and I am afraid *R3D* comes in third. However, if you are in the business of creating life-like animations, you might choose *R3D* because of its animating power. AS



Mirror is one of LightWave's innovative modelling tools. It can be used create symmetrical shapes, by producing "mirror objects".



With A4D's ability to input any of a dozen text styles , your 3D text wishes are easily fulfilled in hardly any time at all.

Prices & Suppliers

Aladdin 4D £213.99
Hobbyte Computing
10 Market Place, St Albans, Herts AL3 5DG
☎ (0727) 856005 or 841396.

LightWave/LightRave £799
Ramiga International
Stablau Rinpentrefoelas, Clwyd, LL24 0HT
☎ (0690) 770304.

Real 3D 2.4 £410
Activa UK
Unit 20, Phoenix House, 86 Fulham High Street, London SW6 3LF
☎ (071) 371 5241.

CHECKOUT
How do they compare?

Interface Design:

Aladdin 4D 84%
Difficult at first, but improves after a while.
LightWave 93%
Extremely easy to get to grips with.
Real 3D2.4 72%
Configurable, but, complicated.

Texture Mapping:

Aladdin 4D 95%
Plenty of options and effects.
LightWave 90%
Good, but in short supply.
Real 3D2.4 85%
Very good, but complicated.

Documentation:

Aladdin 4D 80%
Not bad, and the newsletter helps.
LightWave 81%
Good, but, shies away from more complicated functions.
Real 3D2.4 70%
Confusing and inaccessible.

Expandability:

Aladdin 4D 95%
Expandable with newsletter additions four times a year.
LightWave 90%
Expandable, but major upgrades are expensive.
Real 3D2.4 95%
Real 3D's modular interface can be expanded easily.

Overall Rating:

Aladdin 4D 93%
Despite its initially daunting interface, this is a program with many powerful and unique features. What's more it's approximately half the price of Real 3D2.4 and a quarter of LightWave's.

LightWave 96%
This is a truly impressive all-round 3D system. Within a couple of weeks' use its possible to create high-quality animations and still images. The only real complaint is the expensive combination of LightWave and LightRave.

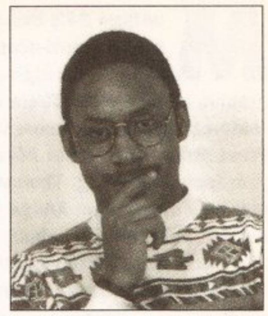
Real 3D 2.4 91%
Real 3D is a phenomenally powerful animating system, with many of its abilities matched only by high-end systems. There is no doubt that you can produce incredible animations and photorealistic images. However, be prepared to spend a lot of time before you learn how to use it properly.

Here's our feature-by-feature guide to three of the best 3D animation systems available for your Amiga.

	Aladdin 4D	LightWave	Real 3D
ANIMATION			
Direct Single Frame Control	N	Y	Y
Object Morphing	N	Y	Y
Texture Morphing	Y	Y	Y
Key-frame Animation	Y	Y	Y
Hierarchical Key-frame Animation	N	Y	Y
Particle System	Y	N	Y
Collision Detection	N	N	Y
Inverse Kinematics	N	N	Y
Multiple Camera Views	N	N	Y
Spline Paths	Y	Y	Y
Time-Stretching/Shrinking	Y	Y	Y
Skeletonal Control	N	Y	Y
DISPLAY DEVICES			
AGA-Chipset	Y	Y	Y
DCTV	Y	Y	Y
Firecracker	Y	N	N
Harlequin	N	N	Y
OpalVision	Y	N	Y
Retina	Y	N	Y
Video Toaster	N	Y	N
OBJECT FORMATS			
DXF Import	N	Y	Y
EPS	Y	N	N
DEM	Y	N	N
MODELLING			
Boolean Operations	*	Y	Y
Fonts	Y	Y	Y
Extrusions Along Paths	Y	Y	Y
Free-form Deformations	Y	Y	Y
Fractal Objects	N	N	Y
Hierarchical Object Creation	N	Y	Y
SURFACE PROPERTIES			
Animated Textures	Y	Y	Y
Gas/Turbidity	Y	N	Y
Bump Maps	Y	Y	Y
Transparency Maps	Y	Y	Y
Reflection Maps	Y	Y	Y
Displacement Maps	N	Y	N
MAP FILE FORMATS			
IFF	Y	Y	Y
JPEG	Y	N	N
PCX	N	Y	N
Targa	N	N	Y
IMAGE SAVE FORMATS			
IFF	Y	Y	Y
Targa	N	N	Y
RENDERING			
Lens Flares	Y	Y	N
Motion Blur	N	Y	Y
32-Bit (8-Bit Alpha Channel) Rendering	N	Y	Y
Particle Blur	N	Y	N
Depth of Field	N	Y	Y
Soft Shadows	N	Y	Y
MISCELLANEOUS			
ARexx Support	N	Y	Y
Built-in Programming Language	N	N	Y
User-definable interface	N	N	Y

* Aladdin 4D has no Boolean operators, but has its unique LOScut tool.

Move with the times



Graeme Sandiford checks out Clarissa, a high-end animation package that aims to make your animations much faster and smoother. Let's see how it moves!

If our animation special has whetted your appetite for grander things, you might already have decided to invest in a high-end animation package. If you do, the first thing you'll notice, especially if you have an unaccelerated Amiga, is that playback can often be slow and a little jerky. There are guidelines you can follow to improve the playback quality of your animation. Even so, their quality can be improved even further by an animation optimizer like *Clarissa*.

Clarissa has been created by Prodad, the same people who make the *Adorage* video titler and effects generator. *Clarissa* is, in effect, an extension of the SSA (Super-Smooth Animation) format that was introduced in *Adorage*. *Clarissa* converts normal ANIM5 format animation to its own and thereby produce a smoother and faster animation. The processed animation can achieve playback speeds of over 25fps (frames per second) – to the human eye this is as good as watching a video. One of the key methods *Clarissa* uses to achieve this speed is Half-framing. *Clarissa's* half-frame structure works a bit like a TV image; each frame is spilt into halves. On play back, the animation is replayed fast enough to fool the eye into seeing a series of smoothly moving solid frames. Because of this method, it is best to turn any flicker fixing devices off. Your animation file will need to be in an interlaced format for this process to work, but don't worry – there is a macro for performing this task.

Clarissa can also combine and edit several animations or groups of frames. You have four animation buffers, or sources, that you can load animation frames into. You also have a master buffer; this is the animation area that will be used to compile the final animation. You can cut and paste freely between the source buffers and the master buffer, and combine animations of different lengths.

As well as loading the animation frames from already created files, you can grab the screens of other applications. All you have to do is select the screen you wish to grab from those that are displayed in the Screen Grabber's requester. The requester also displays information on the selected screen's mode, such as its resolution and screen depth (8-bit, 24-bit etc.). You can grab the screen directly, or by a trigger. If you perform a direct grab, *Clarissa* will capture the selected screen directly from the requester. If you wish to grab the screen at a later time, you can select a trigger. This can be either a hotkey, or a hotkey in combination with the active screen or the frontscreen.

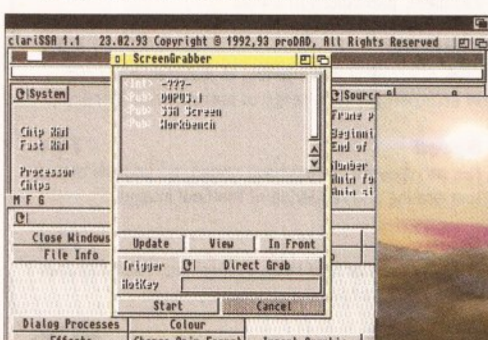
One of *Clarissa's* most powerful features is its ARexx Macro facility. More and more graphics orientated products are incorporating macros. This is particularly useful for animation programs, as these often require you to repeat processes. *Clarissa's* macro support is very comprehensive. The program comes with several useful macros that are available from a MFG (MultiFunction Gadget) panel. These can perform a number of useful tasks, for example there is a macro for setting paths. This a great way of speeding up the way you work, as you don't have to waste time selecting paths to save your files to, or load them from. As the macros rely on ARexx, you really need to be running Workbench 2 or greater.

The MFGs also have wider and more complicated applications. There are several effects that macros supply to liven up your animations and aid in changing their playback. Dyn Anim Record will recalculate the length of an animation; this will enable an animation's playback time to be edited painlessly. It achieves this by re-inserting frames. Multi-HF-Mix will mix two animations frame by frame. Pap-Rap produces an internal looping effect, known as a Rap – nothing to do with blokes in basketball boots and baggy jeans. A Rap is a bit like a visual stutter effect. Perhaps the most powerful demonstration of ARexx Macro's versatility is the Import Graphics macro. This macro can be used to interact with other programs, such as *ADPro*. You can easily edit these macros and even create your own.

Another graphics-package based trend is to include a Shell interface. *Clarissa Shell*, as with most Shell-based programs, enables the entering of commands directly. As well as providing CLI addicts with a modicum of reassurance, you can use the Shell to perform multiple tasks and receive information directly – without having to pull down several menus.

Clarissa's manual is excellent. First it explains the concepts needed to understand and get the best out of the program. It then runs through the program's features, and dedicates two chapters to ARexx macros and how to customise *Clarissa's* interface to suit your needs.

The animations produced by *Clarissa* are smooth and fast. Most people will undoubtedly convert, or compile, their first animation and find it plays back too fast. However, this is not a problem as you can easily slow down the animation, or insert additional frames. You can also specify how much the program should concentrate on producing faster or smaller animations. The program also comes with an SSA animation player to display *Clarissa* files. ProDAD have really produced a winner; go out and buy it – *now*! AS



Clarissa's Screen Grabber in action. You can use it to grab screens from other applications.



Clarissa is an absolutely stunning animation package. All true animation enthusiasts – buy it

WHAT
Clarissa – £79.95
WHO
ProDAD
WHERE
Burgess Video Group (BVG)
☎ 0874 611633

CHECKOUT
CLARISSA

Documentation	**86%**
Superb – clearly written and with exercises at the end of each chapter.	
Features	**86%**
Almost every feature you're ever likely to need is there.	
Speed	**84%**
The actual playback of animations is excellent, but it will help if you have a pretty butch Amiga when working on more than one at a time.	
Ease of Use	**88%**
Extremely easy to use, with on-line help as well.	
Price	**80%**
Priced for the professional animator, or affluent enthusiast.	
Overall	**86%**

If you're into high-end animation, then this package is superb.

Montage 24

With a well-equipped Amiga, Montage 24 promises top-quality video titling and captioning. Gary Whiteley investigates...

M*ontage 24's* basic function is to produce anti-aliased text screens suitable for high-quality title and graphic applications. There are quite a few extra features which most users will find indispensable. What strikes you about *Montage 24* first is its in-your-face packaging. Then you, no doubt, notice just how much of an Amiga you need to run this unique, but expensive, baby.

The first big surprise is that all of *Montage 24's* workscreens are implemented in 12-bit HAM mode so as to accommodate their use on any suitable Amiga. Which is fine by me as this system gives a reasonable representation of the finished graphics regardless of Amiga model, even if it is a little strange to see programs running HAM screens in the mid-1990s.

The next surprise is the non-standard, multi-layered interface, though it's a style which *Broadcast Titler 2* owners will quickly recognise. No pull-down menus here, rather a combination of mouse and hot-key driven requesters for all of *Montage 24's* many parameters. No multitasking either, which is especially disappointing considering that the software isn't using the Amiga to its full potential (since it neither does scrolling or crawling sequences).

WHAT HAPPENS?

Thank goodness for the various tutorials provided, because otherwise it would be a tough task to learn all about *Montage's* many features (as well as its lack of some vital ones).

Montage 24's basic function is to produce anti-aliased text screens suitable for high-quality title and graphic applications. There are quite a few extra features which most users will find indispensable, like bevelled boxes, frames, import and export of IFF files and smoothly graduated backdrops. There are also, of course, a whole range of text effects from soft shadows, variable face/shadow transparency and graduated fills to text justification, font scaling on the fly and several other good effects.

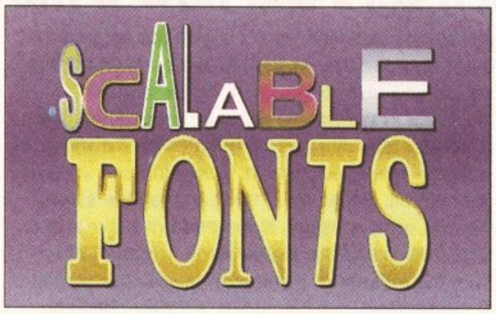
It is quite simple to produce some nice-looking screens by first choosing a font (from the eight supplied), choosing a colour scheme (with optional outline and/or shadow) and then typing the new text in at the current cursor position. Do you need to change its colour, or alter the shadow style? No problem – just select the text you wish to change by dragging a box around it, then adjusting the required parameters (all or any that are necessary) and 'pasting' the new styles to the selected text.

COMING SOON

Although *Montage 24* is currently limited to the 8 fonts supplied, Innovision have produced an optional Postscript conversion module which can turn any suitable Postscript font into a *Montage* font. Unfortunately it wasn't available at the time of this review, but distributors Meridian expect it to be available at any time, so give them a call if you are interested.



***Montage 24* produces excellent captions, but it lacks the ability to either scroll or crawl text.**



All of Montage's fonts are smoothly scalable – and there's no doubting that the results look great.

What about changing the text size? Again this is very easily achieved either by dragging the text box out to the required size, or by entering numerical data to set the size. The result – beautifully smooth scaled text. One drawback I did find with scaling text was that there seems to be a limit on the maximum font size available and when I wanted just a couple of letters to fill the screen entirely it proved to be an impossible task.

What I haven't mentioned is the amount of time it takes to both produce and make changes to any screens you require. My test machine was an Amiga 2000 fitted with a 40MHz 68030/68882 accelerator, 12Mb RAM (including 2Mb chip RAM) and an Opalvision card, a setup which certainly isn't underpowered, yet I was annoyed at the time it was taking just to get my changes up on the screen and rendered to 24-bit so that I could see them in all their glory. From this experience alone I'd certainly be cagey of recommending *Montage 24* to Amiga 1200 owners (or indeed owners of Amiga 1500/2000s fitted with 68020 cards).

From this point on, life with *Montage 24* isn't so simple. Granted it works in full overscan, and can load IFF pictures and brushes as backdrops, as well as be used to do some limited compositing, but I found these processes to be quite awkward, and several times I found that I'd permanently pasted some text or an effect in place by accident and had to start all over. Frustrating would best describe the learning curve of *Montage 24's* more complex functions.

DULL TRANSITIONS

Depending on which Amiga setup you're using, only a certain range of transitions will be available to you. AGA owners get the best deal, whilst IV-24 users get the worst, with Opalvision lying midway. Still, if the results are similar to those demonstrated on the Opalvision there's not that much to get excited about – just standard Opalvision effects as supplied with *OpalPresents* or the *Opal Player*. If you're expecting a *Scala MM300*-beater, then I'd better tell you that *Montage's* effects don't even come close.

In conclusion, whilst *Montage 24* is capable of producing high quality text and graphic screens it seems more like a posh slideshow maker than a full-featured character generator. It would be great for information displays and static uses such as sports scores, but as an all-round character generator there is still a substantial amount of work required to get this baby up to scratch.

REQUIREMENTS

Amiga 1200/2000/3000/4000 with at least 8Mb FAST and 1Mb CHIP RAM, 10Mb hard drive space and 68020 accelerator. WB2.04 or greater recommended. Non-AGA Amigas require either OpalVision or IV-24 graphics cards (can also be used in A4000). A separate version is available for NewTek's Video Toaster. AS

WHO
Meridian Software Distribution Ltd
WHAT
Montage 24 – £230.96
WHERE
East House, East Road Trading Estate, East Road, London SW19 1AH ☎ 081 543 3500

CHECKOUT MONTAGE 24

Documentation 90%
Glossy presentation with plenty of tutorials and information, though could be more explicit at times.

Quality 95%
Excellent, particularly in 24-bit.

Features 80%
Lack of scrolling and crawling is definitely a big minus in an otherwise wide range of features and functions.

Speed 75%
Not as nippy as I would have hoped, particularly during text scaling and rendering of the final images.

Price 75%
Considering *Montage* lacks several important features I would hesitate to call it attractively priced.

Overall **80%**
A unique, but expensive program requiring a high-spec Amiga. Great for high-quality static or limited movement graphic and title images but by no means a bargain.

VistaLite

Graeme Sandiford explores a low-memory version of the famous landscape generator.

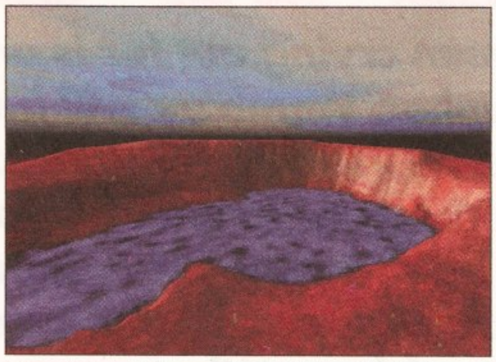
A funny thing happened to me the other day while watching TV. It was actually during a commercial break – an advert had a huge mountain range behind it, with a particular mountain in the foreground. "Hey," I exclaimed, "I recognise that mountain!" However, the members of my family were not impressed, even when I told them that I had that area saved as a DEM (Digital Elevation Map). I recognised the mountain from a rendering I had made in *Vista Lite*.

Vista Lite was actually the reason I bought an AGA-Amiga. After buying my machine I spent an agonising two months waiting until I could afford a memory expansion unit. But, you lucky individuals don't have to scrimp and save your pennies, oh no, you can run *Vista Lite* lite with as little as 2Mb of memory. Hurrah!

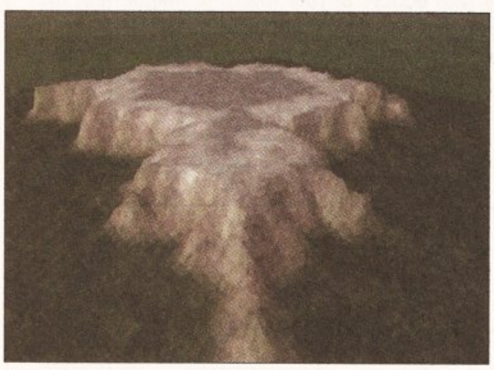
Of course, this reduction in memory-requirements doesn't come without a price. Virtual Reality Labs have really worked hard on streamlining the program, and have done so in response to demands from existing users, which is nice to see.

For those of you that are unfamiliar with *Vista*, it's a truly fantastic program – one of the, if not *the*, best programs of last year. It produces realistic-images from either fractal equations or 'real-life' data. The data it uses is generated by NASA satellites. They scan areas of the Earth's surface from space, and then represent the surfaces as changes in elevation and save them as DEM files. This output is a bit like a contour map – the closeness of the lines represents the sharpness of the change in elevation (close lines are cliff faces and widely-spaced lines gentle slopes). *Vista Lite* will take this information and create a 3D model. You can move around this model freely, zooming in out and rotating your view with the aid of Camera and Target points.

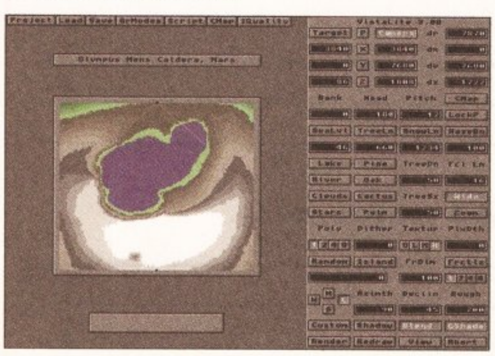
Rendering a plain 3D model would be pretty boring. So what *Vista* does is create polygons to represent surfaces and then add colour and texture to them. But, the program doesn't stop there; you can also render the sky and fractal clouds. You can even add rivers, lakes, stars and three types of trees. If you are dissatisfied with the image you get when using real landscapes you can always fractalize them. Don't worry, this is completely painless *and* environmentally-friendly. It just adds some fractal details to the existing landscape; in effect it just roughens the landscape.



Blue skies on Mars – what will they think of next? In fact, it's up to you what colour everything is.



This is a sight you certainly won't see every day – a Mandlebrolt mountain.



The coloured area to the left of this picture, is a colour-coded representation of a DEM (Digital Elevation Map) file.

If you are still not happy with reality, you can go one step further and generate entire landscapes from fractals. This can produce some pretty bizarre terrain. You can either spend the better part of eternity searching for a desirable landscape or, if you prefer, use the Island function to produce more predictable results.

You are given a choice of four polygon sizes. These will affect how smooth the rendered landscape will appear; the smaller polygon, the smoother the surface. As there are more of the smaller polygons in any given area, this means that the image will take longer to render on the lower setting. While small polygons produce the best result, larger ones are still useful for producing a preview of the rendered landscape. You also have the option of using Gouraud for shading and blending the polygon's colours.

Once you have loaded or created a landscape you'll want to find the most effective shot from the landscape. To achieve this, you can move the camera around the scene. You can do this by pointing and clicking or, for accurate positioning, you can enter numerical values. You can also position a target for the camera to aim at. If you want to get the basic idea of how a shot will look without rendering, you can enter the preview mode. This will present you with a wireframe image. You can then move around this wireframe by clicking, adjust the camera's focal length with the cursor keys, and even change the camera's pitch.

For added realism you can also add a variety of trees. You can choose from splendid oak, thorny cactus and, for those rainy days when you wish you were at a sunny beach, breezy palm trees. In order to control the number of trees and their position, you can set a 'Timberline', above which no trees can grow, although one or two trees may appear above this line.

You can also create a Snowlevel. The Snowlevel is the lowest level that *Vista* will create snow. You can control the Sealevel as well, so you can submerge areas of a map.

Another factor that will affect the way your final image will appear is the lighting. You can again choose to enter values numerically or by pointing and clicking.

You can define which colours will be used for snow, trees, water – almost anything. This palette is known as the colour map. *Vista Lite* comes with nine colour maps including ones suitable for Mars, a desert, sunrise and sunsets, Spring, Winter etc.

If you want to squeeze that bit more into your picture you could try using a wide angled lens. No really, you can choose between a wide angle and a zoom lens.

If you would like to keep with the spirit of this month's issue, you can try animating. Yes, you can actually fly around your landscape using the camera's position to map out a flight path.

So what's missing from this version of *Vista*? Well for one thing, you can no longer save or load colour maps, this is a useful function to have if you find a particularly pleasing colour scheme. It's no longer possible to create custom image sizes, you now have to choose the preset ones. You also have less control over the shape and detail of trees. These are the major exclusions, but they are not really complaints, as the lads at VRL have really done a fine job at reducing the memory requirements. My only real gripe is that you can't load large landscapes even if you have enough memory – some sort of memory sensing feature would be great. AS

WHAT
VistaLite Pro 3.0 – £39
WHO
Virtual Reality Labs
WHERE
Meridian
East House, East Road, London SW19 1AR ☎ 081-543 3500

CHECKOUT
PRODUCT NAME

Documentation 70%
Not bad, but not particularly outstanding.

Speed 87%
Very good considering the complexity of the objects.

Features 91%
As you would expect there are a few features missing, but nothing important.

Value for Money 99%
Excellent!

Overall 91%
An excellent package that has just gained a larger market.

BRAVE NEW WORLD OF AMIGA

Win! We've got £250 and ten pairs of free tickets to give away, so get those suggestions in!

The show everybody's been crying out for is on its way! From 18th to 20th November, Wembley will be playing host to a a show dedicated exclusively to the Amiga. This is your chance to mould that show – fill in the questionnaire below and tell us what you want to see there. We'll be drawing your responses out of the hat – the first one will win £250 to spend at the show, with ten runners up each getting a pair of free tickets. What are you waiting for?

Okay, okay. You've been hassling us for long enough, so here's just what you asked for – The World Of Amiga Show, devoted entirely to the computer we all know and love. Naturally, we're going to make the thing as absolutely gob-smackingly brilliant as can be, and so we'd like your help. We want to know who and what you'd like to see there, and which questions you'd most like to put to the experts.

Not only does this mean we can put on the show best suited to you (hey, everyone's a winner!), but it also gives you the chance to get in for nowt, and even to get some hard cash to spend once you get there.

Once we've received and inwardly digested all your entries, we'll pick eleven of them out of a hat (or another suitably randomising receptacle that comes to hand). The first one out will win its sender £250 to spend at the show – your chance to buy that dream peripheral or software package. The ten runners up will each receive a pair of tickets, each worth £6.

The European World Of Amiga Show will be taking place at Wembley, London, from Friday 18th to Sunday 20th November 1994. Opening times are from 9.30am to 5.30pm on the Friday and Saturday, with early closing on Sunday at 4.30pm. Entry will be £6 on the door (£4.95 in advance) for adults, £4.95 (or £3.95 in advance) for under 13s, and free for under 4s.

So get your thinking cap on, fill out the form below and send it to: Show Business, *Amiga Shopper*, 29 Monmouth Street, Bath BA1 2DL. Easy!

Now sit tight and wait for the event of the year to happen – it'll be unmissable. AS

YOUR DREAM AMIGA SHOW – TELL US WHAT YOU WANT

We've already got lots of hot stuff ready and waiting for the show – workshops from developers showing how to get the very best from their products; question and answer sessions with editors of your favourite magazines, the top developers and key Commodore folk; a special buying area to help you find those bargains; a special American area overspilling with those innovative peeps from the States, and their flash new kit; a games arcade; and plenty of competitions – so what else would like?

Which three companies would you most like to see exhibiting new products at the show?
1) ____
2) ____
3) ____

Which three Amiga products (hardware or software) would you most like to see?
1) ____
2) ____
3) ____

What question would you like to put to the show's expert panel?
____
____
____

We'll also need your details, so if you win we can give you your prize...

Name ____

Address ____

____

____ **Postcode** ____

Window Shopper

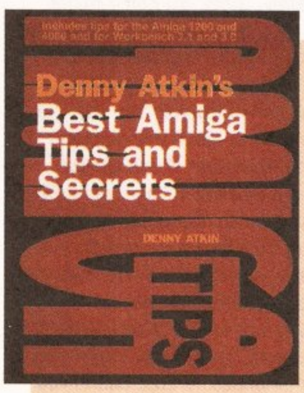
Window Shopper reviews hardware, software and books in a brief and compact formula. It enables us to give you a taste of a large and varied selection of products – Graeme Sandiford is your host.

Over the last few issues we have not managed to squeeze in as many book reviews as we would have liked to. With a wealth of software to review, books have been last on our list of priorities. However, with the re-introduction of *Window Shopper*, we have the opportunity to do justice to the paper-based side of the Amiga. We have also a review of an Amiga Instructional video for Workbench 3.0. If you still feel under-educated, then you'll enjoy our educational reviews. This issue we are covering everything from kids to dinosaurs. Yes, that's dinosaurs again, but I am sure you'll agree that the software manifestation of dino-mania tastes a lot better than its cereal equivalent. We're also testing a set of macros that will give *LightWave 3D* users even more power and flexibility – as if it didn't have enough already!

DENNY ATKIN'S BEST AMIGA TIPS AND SECRETS

Compute Publications

Denny Atkin is a respected Amiga journalist. He has written for a number of Amiga magazines both in Europe and the US. He's also been a key figure in the Amiga scene for almost a decade. His new book, *Denny Atkin's Best Amiga Tips and Secrets*, aims to impart some of his knowledge and experience to other Amiga users. The book covers virtually all aspects of Amiga computing, from purchasing your dream machine right through to making it run faster and more efficiently.



If you are looking for an informative guide showing you how to get the most of your Amiga, this may be the book for you.

The first chapter discusses the various factors you will need to take into account when deciding which Amiga would suit your needs best. The information is comprehensive and includes all models of the Amiga. The listings for each machine include its speed, operating system version, standard and expanded RAM capacities, expansion ports, external ports and graphics capabilities. The chapter contains enough information to give a clear view of what each machine can do, and how easily, and how far they can be expanded.

There is also a chapter dedicated to disks. This comprises information on floppy and hard drives and how to speed them up. It will also explain how to read and write MS-DOS, Mac and Atari ST disks. The two largest chapters cover Workbench and the Command Line Interface (CLI). The reason these two are so long is that they cover every version of both AmigaDOS and Workbench.

The Workbench chapter contains loads of helpful tips on how to get the most out of it and even contains information on how to access the secret messages built into the different versions of Workbench. There are plenty of tips on how to organise and spruce up your desktop. After reading this chapter, you should be able to customise most aspects of Workbench and understand how to change your icons, how to select the right fonts, change tooltypes and get more space on your Workbench screen. There are extra tips for Workbench 3.0 users on how to improve compatibility with older programs, place pictures on your Backdrop and use Multiview to show all manner of files.

The CLI chapter describes how to get the best out of the different versions and contains tips on how to streamline your startup-sequence. The chapter also covers most of the more commonly used tasks, such as making commands Resident and Assigning paths. It will give you enough information for you to be able to edit the CLI to your own tastes and needs.

The chapter on monitors and video will tell all you need to know to get started on creating animations and videos. It covers the factors you need to consider when buying a monitor for your Amiga. It also explains how you can get the best display from your machine, and how to fully exploit the new graphics modes of AGA-Amigas.

There are also chapters dedicated to using and buying printers, CD-ROM drives, comms, Mac and PC emulation and file transfer and advice on how to get the most out of the AGA-Amigas. There are a couple of useful appendices of recommended software and hardware too.

The book does contain some useful information and is written in a pleasant and informative style. If you are looking to get the most out of your Amiga, or just searching for time saving advice you could do a lot worse than purchasing this book.

Product:	***Denny Atkin's Best Amiga Tips and Secrets***
Price:	***£18.45***
Supplier:	***Compute Publications International Ltd***

Overall Rating: 82%

AMIGA A1200 BEGINNERS PACK

Bruce Smith Books

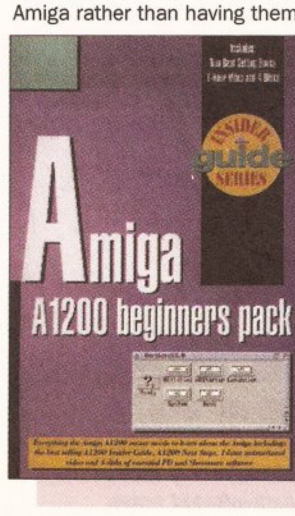
This is an interesting idea: why not take two best-selling books, some PD software and bundle them with an instructional video? Bruce Smith Books' *Amiga 1200 Insider Guide* was well received on its release, as was the follow-on title *Amiga A1200 Next Steps*. But, how successful will their combination with the instructional video be, *An Introduction to the Amiga 1200*?

When the *Amiga 1200 Insider Guide*, written by Bruce Smith, was released last year, I immediately rushed out to buy a copy. To be honest I was a little disappointed, most of the information, although well-researched, included very little in the way of advanced tips and instructions. However, the book really was intended for use by new Amiga owners. It has to be said, it has done a very good job, and has swiftly become a very popular title among Amiga 1200 owners.

The book sets out to introduce the reader to the basics of using the Amiga 1200 and getting the best out of its new features. It covers most aspects of using the 1200, including its operating system and the utilities supplied with it. The book is well-designed, with short chapters and plenty of sub headings, so you don't have to wade through masses of straight text. The book provides enough information to get you started with AmigaDOS, fonts, icons, utilities and tools, printers and Workbench. As mentioned before, the information is not particularly in depth, but is enough to keep most beginners occupied for some time.

The Amiga 1200 Next Steps, follows up the *Insider Guide's* introduction with some hard-core information about hardware, as well as software. It has extensive coverage of the new commodities and features of Workbench 3.0. It shows you how to use Multiview effectively and create AmigaGuide hypertext documents. It documents how to write your own AmigaDOS scripts and explains a number of the more complicated commands. On the hardware side of the Amiga, it explains how to fit a hard drive and install a printer.

The part I was most looking forward to examining in this pack was the video, *An Introduction to the Amiga 1200*. It sounds like a pretty good idea; showing people how to use the Amiga rather than having them read about it. But, I



Take two best-seeling books, some PD software and bundle them with a video and you have the Amiga A1200 Beginners Pack.

must say watching this video was one of the most painful experiences of my life so far. Actually, as I'm male and will probably never give birth to a child, it could very well be *the* most painful thing I will ever need to do. It's a shame the wooden presenters and inexplicably changing camera angles ruined some good material. If you do have a high tolerance of pain, and have never used a computer before, you might actually find this video useful. But be warned – it may cost you your sanity.

The PD includes *BuddBase* – a database, *TextEngine* – a word processor, *OctaMED* – a music editor, *ABackup* – a backup utility, *PowerPacker* – file compressor and a copy of *VirusChecker*.

All in all, the pack does a pretty good job of guiding a new A1200-user through the early period of ownership, right up to upgrading when they have outgrown it.

Product: Amiga A1200 Beginners Pack
Price: £39.95
Supplier: Bruce Smith Books
Tel: (0923) 894355

Overall Rating: 85%

POWERMACROS FOR LIGHTWAVE 3D

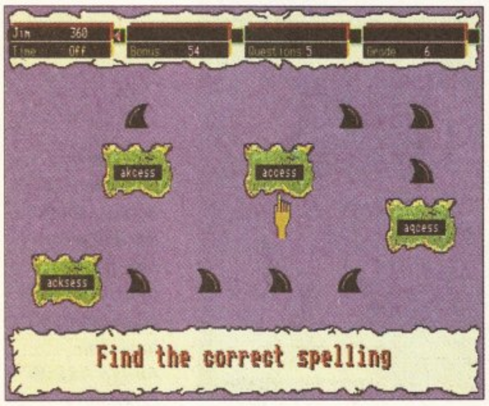
CineGraphics

If you have read our review of *LightWave* you will probably have been amazed by its vast array of powerful and flexible functions. If you aren't, then *PowerMacros For LightWave 3D* will certainly reduce you to a quivering mass of appreciation. It's a collection of macros for use with *LightWave*. They use *LightWave's* macro facility to provide a number of useful new tools.

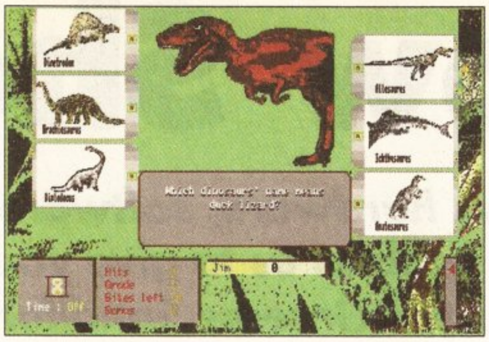
The collection covers several areas, including: Business, Energy and macros for the Layout and Modeler modules.

The Business Macros can be used to create a number of objects for charting data. The Chart Legend script will create a bevelled plaque with a bevelled cube for each title you enter. There are also two macros for creating pie charts. Chart 1 will create a pie chart with segments that are sized to reflect the percentages you enter. Pie Chart 2 does pretty much the same thing, but where Pie Chart 1 only changes the surface names for each segment, Pie Chart 2 actually creates and saves each section as a separate object. On executing the pie chart macros you will be asked for the radius for the chart, its depth and the data, in percentages, for each section.

The Energy macros are of particular use for those who wish to create realistic animations. The



In the game Shark, your task is to choose the correct island from shark-infested water.



It may not have the Spielbergian grandeur, but this T. Rex will still show you the difference between a Diplodocus and a Triceratops.

Shatter script makes use of *LightWave's* Boolean operators to cut an object into several smaller ones. There are three values that need to be entered. The number of Iterations will determine how many passes the macro will make – each pass will double the number of objects. You can choose between three Shatter Methods: Random, Semi-Ordered and Ordered. The surface field contains the collective name of the shattered objects.

After shattering an object, you'll probably want to animate it as an explosion. BlowUp, unsurprisingly, blows these objects apart, and does so with an amazing degree of realism. You are given complete control over how the various objects behave. You can decide how much the initial velocity of the pieces will be, and the maximum velocity they can reach after the explosion. You can also specify the intensity of gravity, so you can have explosions where the pieces float to the ground eerily. You can also specify how much each will rotate by specifying the maximum and minimum average degree of rotation. The Bounce Height is the amount, in percentage, of energy returned when the objects hit the ground. You can also set the height of the explosion above the floor's position. The explosion length and starting frame can also be specified.

The Swarm macro will automatically create swarming motion paths using Attractor and Repeller objects. The complexity of the paths depends on how many, and what size attractors and repellers are in the scene. You can edit the length of the animation, and the speed the objects will travel at. You can also make use of objects that have been cloned by the Clone Object macro, available in this collection. For extra control, you can use spline inertia control to govern how strongly the objects react to the attractors and repellers. You can also specify the object's starting location and initial vector, which is the direction all objects will move in before they are attracted.

Layout Macros perform tasks that relate to operations you might perform in the Layout module. As macros can only be executed from the modeller, this can sometimes mean you have to switch from one module to another, which is a little awkward at times. However, it is still easier than doing it yourself. Focal Distance uses a scene file to create an envelope that will keep the camera focused at controllable distance throughout an animation. Render Batch will create a batch of scene files for sequential rendering. Snake is another interesting macro; it enables you to morph an object along a path. This is great for creating life-like movements for snakes or fish.

The Modeller Macros provide added functionality and power to the modeller. Some of the outstanding scripts are Clone Object and Surfaces and Save Pivot Point. Where Clone Object and Surfaces differs from a normal clone is that it changes the name of the surfaces automatically, saving you from having to change each one. Save Pivot Point makes life easier by not saving each object's pivot point at the Modeler's point of origin. This stops all your objects from appearing at the centre of the Layout grid.

This really is a fantastic collection and I would certainly recommend it to all *LightWave* users. It makes life so much easier and adds several new features to an already powerful animation and rendering tool.

Product: PowerMacros For LightWave 3D
Price: $149 ($99.95 intro price)
Supplier: CineGraphics
Tel: (0101) 619 727 5589

Overall rating: 84%

DINOSAURS

10 out of 10

Dinosaurs, at first glance, is very simple to use. The user is greeted with a menu system with big friendly buttons in the centre of the screen. Surrounding the menu system are small pictures of what vaguely resemble dinosaurs, accompanied by their name. Occasionally, a Tyrannosaurus Rex will pop up from the side of the screen and terrify any unsuspecting pupil with a loud, tinny, poorly digitised roar. The players names can be entered into the computer, and are updated according to achievement. Score cards can be viewed and printed. Accompanying the program disks are two small booklets, a player guide and a sparse information booklet.

The first of the games is *T. Rex*. You attack other dinosaurs by clicking on the correct dinosaur which satisfies the question being asked at the centre of the screen. Unfortunately, this game has limited interest, and questions are often repeated. *Tracker* uses step-by-step processes to identify dinosaurs. Unfortunately, there are some minor errors in this game, for example the text clues on the screen can be obscured by subsequent text clues, making areas of the display unreadable.

The third game is called *Raptor*. You use the Velociraptor's single claw to slash any dinosaur which fits the clue at the bottom of the screen. Probably the best game of all is called *Spare Ribs*. In this game you have to stop the approaching dinosaurs from eating the carcasses by answering multiple-choice questions correctly. The drawback is that questions are frequently repeated.

Missing Link wants you to pick a dinosaur, and match it with a corresponding piece of information about that particular dinosaur. In *Lost Island* you control your jeep over the island road, moving it left and right with the mouse, running over dinosaurs which fit the question on the screen and avoiding all others.

Looking at the program as a whole, many improvements and changes could be made. The first is the awful graphics throughout the games; poorly drawn or digitised graphics plague what could be a useful teaching tool. Perhaps it could be improved if grey-scale graphics were used, and the pictures were of better quality. The attempt at establishing an audio connection between information is equally crudely presented, and vastly unexplored – a pronunciation guide to dinosaur names and related expressions would be very helpful. More information could be supplied in the *Dino Guide* supplement, which contains insufficient

data required to answer some of the questions in the games. At present, this piece of software simply lacks the quality and playability required for good educational software.

Product: Dinosaurs
Price: £25.95
Supplier: 10 out of 10
Tel: (0742) 780370

Overall rating: 40%

SWERVE AGA BACKDROPS

Swerve Video

Attractive backdrops can really enhance a video or multimedia presentation. They can also add a great deal of realism to your 3D objects. But, creating these images can be extremely time-consuming and can demand a substantial amount of artistic ability. If you are lacking in either of these departments, the logical alternative is to buy your background images.

Stuart Hazel, of Swerve Video, has put together several high-quality images in this four-disk set. Their primary use is intended for video work or multimedia presentations. The images have roughly 128 colours; this is enough to create attractive backgrounds and leaves a fair number of colours free. This is especially helpful if you are working with 256 colours. Each image also comes with a pre-defined palette

The images are of a relatively high standard. While they are not particularly extravagant (no 24-bit scanned images here), they do contain plenty of interesting textures. The textures are given a 3D appearance through good use of shading techniques. Most of the images are based on a single colour and shades from light to dark; this helps to keep the number of colours to a minimum.

This package contains 45 images, and while there is some variety, there could be a little more. Most of the images are based on a slightly bumpy look, with the variations largely in colour rather than the actual design. Despite this, there are still enough original designs to keep you happy. Considering the price of £4.75 for 45 images, even the most financially challenged of individuals will realise that this collection is exceptionally good value. If you would like a copy of these backgrounds, send a cheque or postal order to: Mr S Hazel, SWERVE VIDEO, 99 Park Lane, Wednesbury, West Midlands, WS10 9PT.

Product : AGA Backdrops
Price: £4.75
Supplier: Swerve Video
Tel: 021 502 4681

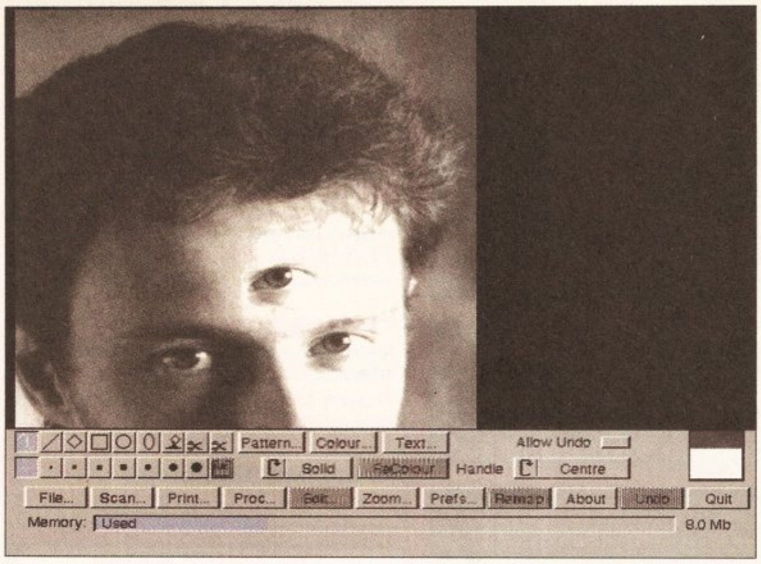
Overall rating: 75%

POWERSCAN PROFESSIONAL

Power Computing

Power Computing have just finished the new version of their PowerScanner package. *PowerScan 4* has a brand new interface and can now produce 256-greyscale images, although these can only be displayed on an AGA-machine.

The scanner itself is well built and fits into the palm of your hand as well as any other hand scanner. It has a maximum scanning area of 104mm and can scan at resolutions of 100, 200, 300 and 400dpi. It also has the usual knobs, buttons and dials for adjusting darkness levels and the type scan, for photographs or text. The interface, however, is a different story when it comes to build-quality. The lead from the scanners doesn't fit in its socket very securely at all; you really have to shove it in, and even then it's a bit wobbly. The label that indicates which end should be plugged into the computer was actually the wrong way round. Despite the incorrect labelling of the thru port, it does mean you can leave other peripherals plugged in. As well as saving hassle, this can help prolong the life of your parallel port.



PowerScan Professional 4 has some limited editing tools, such as cut and pasting. in fact, it's pretty much the same as a paint package. It also has some useful image processing functions.

The software's interface has been improved, making it easy to get to grips with operating the scanner. You can use the scanning preferences to scan an area larger than the scanning head. This can be achieved by splicing together the images from two passes. The editing menu gives access to most of the tools you would find in a paint package. The processor will provide limited image processing. Among the processes you can perform are: smoothing the image, and creating an emboss effect. This is the area where you convert the black and white images outputted from the scanner to greyscale ones. When converting the images, you can specify the type of dithering you want to use.

Power have certainly improved the *PowerScan*, despite its flimsy interface. It's a shame that it doesn't scan in greyscale directly, but its image quality is as good as you would expect for £120.

Product: PowerScan 4 (mono)
Price: £119
Supplier: Power Computing
Tel: (0234) 273000

Overall rating: 84%

JUNIOR ESSENTIALS

10 out of 10

A program which will assess and record the progress of up to 64 children in 36 specific areas of National Curriculum Attainment Targets, and print out records of achievement in topic areas, may seem like an unbelieavable dream to some parents and teachers. The presentation of *Junior Essentials* is very similar to that of *Dinosaurs*, and when closely looked at, it appears to have the same program base, with a similarly designed loading screen. Like *Dinosaurs*, the loading time is lengthy. Once this is over, you are greeted with a menu screen almost identical to that on *Dinosaurs* – only this time an annoying cowboy pops up, instead of a T. Rex.

Fortunately, more of the smaller pictures are drawn rather than digitised, the result being clearer and of better quality than those of *Dinosaurs*. One nice touch is the inclusion of small pictures surrounding the menus, of day-to-day objects, with their name both in English and French.

Break Up is the first game in the collection. Based roughly on Break Out, or bat 'n' ball, the aim is to break through the barrier and create a clear path through to the correct answer. Considering *Junior Essentials* is aimed at five to elevens, there is a problem concerning difficulty levels, especially when the kinds of sums are 68+75, and worse.

The second game is entitled *Rat Race* and involves controlling a character around a grid, upon which are positioned several objects. The aim is to move to the correct object which satisfies the question being asked. Compared to the first game, the initial questions are much easier, more suitable for the lower end of the age bracket. The next game is called *Shark*. Your task is to choose the correct island from within shark-infested water. The islands move about the screen, appearing in random places.

In *Artist*, you can select between a palette of bright colours to alter pictures on-screen, according to clear instructions from the computer. For playability, *Defiance* is probably the best game. The main aim is to shoot at the answer to the question being asked. The graphics are fairly smooth and the sound effects are acceptable. *Stones* asks you to logically place displayed word boxes on a series of stepping stones. There is a bug in this game. If you click with the mouse anywhere else than the buttons, the computer crashes!

Some of the methods used for reinforcing information are quite clever, for instance, the same object may be described twice in any one game, but in two different ways. Other ways of fortifying knowledge are less desirable, such as asking the same question three times in a row!

Then in summary, perhaps if the quality and structure of the games were more consistent, this could be an effective piece of software. *Junior Essentials* does have the benefit of continuous assessment, and has the ability to award stars for outstanding achievement, but although the basic layout of the software is good, it is still very rough round the edges.

Product: Junior Essentials
Price: £25.95
Supplier: 10 out of 10
Tel: 0742 780370

Overall rating: 55% AS

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AN EXTENSION OF THE MAGAZINE

I am writing because for the first time I am very annoyed with the actions of *Amiga Shopper*. Dropping the cover disk is, I think, very unwise, as *Amiga Shopper* has by far the best cover disk of any Amiga magazine, due to it being treated as an extension of the magazine rather than just a sales gimmick. The way the disks, especially the later ones, were linked with Public Domain, tutorials and reviews of software was excellent.

Having source code and an up to date virus killer on the disk is worth the price alone, and the quality of the shareware and public domain on the disk was always outstanding. There is not a single disk from which I have not used at least one program or file.

It is often said that cover disks containing shareware and PD are a waste of money, but there are not many PD companies selling disks for £1 these days, and very few of these disks are either full or archived, so I think the £1 charged for the disk was good value.

I would also like to comment on the subject of *Amiga Shopper* only concentrating on the newer machines. Having just written a couple of Intuition-based programs I would like to say how much easier Workbench 2 and above makes life for the programmer, making programs smaller and less bug-prone, therefore cheaper and better for the end user. This could balance the cost of upgrading the ROMs, which can be done to any Amiga. Due to this I see no reason why *Amiga Shopper* should not concentrate entirely on Workbench 2 and above (after all *Protext* and *Wordworth 3* only work on these machines), but the magazine should not concentrate on accelerated machines with huge quantities of RAM.

Tim Chick
Alveston, Bristol

Thanks for your comments. I appreciate what you are saying about our disks compared to those from PD houses, but I think people who objected to ours did so because of the lack of choice – they had to have whatever we decided to put on the disk each month. At any rate, the disk will remain an occasional thing from now on.

You're right about Workbench 2, of course – it's a far, far better operating system, not only for the programmer but for the average user too. Trouble is, there's still an awful lot of people out there using earlier versions. While we'll continue to extol the virtues of the later Workbenches, and coax, persuade and beg people to upgrade (go on folks – it does make an amazing difference, really!), we'll still continue to support users of earlier versions.

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£25 WINNER

Oh dear – yet another C bashing or "my language is better than yours"-session in your Oberon article in issue 36, which suffered because of this. I feel that the article could be very misleading to people who are new to programming. And no, I am not criticising Oberon or any other language, just setting the record straight.

Oberon is a modern object-orientated language, so would it not have been fairer to compare it to C++, which is C's object orientated descendant? C++ addresses many of the criticisms of C – for example, it provides much stronger type checking.

I think it's important to point out that C was originally designed to write a portable operating system (UNIX); this task required a high level language that could provide low level access to the underlying computer hardware without having to resort to assembler. This requirement for low level access is why C has some features that are considered undesirable, by some language purists, in high level programming languages.

I agree that some of C's features are dangerous in the hands of a neophyte programmer, but you should blame the programmer for poor quality code, not the tools. I have a circular saw in my shed – it would be useless if it had no teeth because they are considered to be highly dangerous finger eliminators.

It is interesting to note that what is considered to be one of C's most dangerous features, the dreaded pointer, is present in "safe" languages such as Pascal, Modula-2 and Oberon. The designer of Oberon, like C's designers, must have felt that such a potentially dangerous feature was essential for efficiently implementing items such as dynamic linked lists, memory allocation, etc.

With respect to the "classic" C problem of mixing assignment and equality statements, sure this is a problem that still catches out experienced programmers, but as a general programming rule, especially when programming safety-critical software, you should always compile with the highest warning level that your compiler provides. All of the commercial C compilers I use in my day to day work provide a warning which, when activated, will alert the programmer if an assignment expression in a conditional block is found. This message is a warning and not an error because in C it is valid to have an assignment within a conditional block – it is up to the programmer to decide if such an expression was intentional or a mistake.

The module example given in the article, where the variable CoreState is global, to be a good example of poor programming. Any programmer who makes a variable that is critical to the program's operation globally visible is asking for a thermo-nuclear meltdown. Poor program design, not the language used, is the issue here.

On the subject of C include files, it is a compiler that reads them "until the mess has been comprehended", not a text editor as stated in the article. SAS C's Global Symbol Table system, mentioned in the article, provides all of the advantages of Oberon's symbol files and dramatically reduces compilation times.

It's important to emphasise that only good program design and experience will produce reliable programs, regardless of the language they are written in. Languages and compilers are only tools and should be treated as such; it is humans that create poor designs and stupid mistakes.

Derek Cook
Llandysul, Dyfed

Your point is well-made, and I agree whole-heartedly. I must take issue, though, when you suggest the article was of the "my language is better than yours" variety.

Comparisons were drawn between Oberon and C (rather than C++, since C is so much more common), but Oberon is a new language, intended by its proponents to take over from C. As such, it's only natural that its fans should see it as having advantages over what it aims to supersede.

BE LEFT BEHIND (AGAIN)

I write with reference to M Ford's letter in issue 35 *["Be Left Behind" on page 85]*, suggesting that *Amiga Shopper* ought to be split into two magazines, catering for users of earlier machines and those of later ones separately.

I too have an A600, which is adequate for what I intend to do with it. But I still find all the other hardware and software available for the latest Amigas of interest, and long may you continue to publish information on them. And no, I would not like *Amiga Shopper* split into two magazines.

Jim Wilkins
East Cowes, Isle of Wight

No, me neither. Most products will work with all Amigas, but we won't ignore those that don't.

A FISTFUL OF SUGGESTIONS

CHEAP VIDEO USE

Further to your footnote on the back page of *Amiga Shopper*, I would like to suggest a few articles which I would like to see in future editions... possibly:

- A comparison feature of 24/32 bit graphics cards for the Amiga.
- Articles on setting up video equipment to obtain best results using minimal equipment, and suggestions on how to put together a video on videotape using computer-generated images.
- A feature on object-orientated programming in C++ or ADA.
- A review on the new (or to be released) A4000T machine.
- An article on the transputer boards which is supposed to be available for the Amiga and about transputers generally.

Mark Bowles
Horsham, West Sussex

Good ideas. You can expect something on the A4000T in the very near future. As far as the video article is concerned, why not check out our Video On The Cheap special in issue 30 (see page 74 to order back issues)? How many of the rest of you would like to see articles on these (or indeed, other) subjects? Let us know!

A VOTE FOR ASSEMBLER

I would be delighted to see more articles and programming tips for assembly language users, particularly those programming for the A1200 using HiSoft's *Devpac 3* package.

Other areas that I would like to know more about are things like how to combine programs written in BASIC, C and assembler so that program performance versus development time can be optimised.

An article explaining Guru numbers and how they can be used to track down bugs would be something close to the heart of many Amiga programmers, and particularly assembly language developers like me.

A possible idea for a series of articles could be a tutorial nature showing how to write a serious flight simulator [no, no, why don't we go for something ambitious? – Ed] in assembly language which encouraged the reader to customise the program to his or her own design. To utilise the operating system features and make the project flexible and optimisable, the programming techniques could involve multitasking and the management of inter-task communications and task priorities.

I hope you agree there would be plenty of interest in this type of articles and can see ways to use the suggestions in future issues.

Russ Kemp
via FAX

Well, would there be plenty of interest? If you'd like to see a series on assembly language, write and tell me. We can only cover a limited number of languages at any one time. Why not tell me which languages you think *Amiga Shopper* ought to concentrate on?

ANOTHER MANIC MACHINE CODER

Amiga Shopper is without doubt the best technical Amiga publication available at the present time. Its content is generally short, sharp, clear, concise and to the point. The majority of articles cover the necessary "who, what, why, where, when and result" and do so in both an entertaining and informative manner. Topics covered vary, and indeed they should, as we all know that variety is the spice of life. So what I would like to know is where exactly in all this variety is the monthly four page programming tutorial on MC68000?

Contrary to popular belief, MC68000 assembly language itself is not difficult to learn – it is possible to teach it to an eager idiot in about a month with the aid of a good book and some serious determination on the part of the instructore. So what's the problem, and why do so many of us have so much trouble getting to grips with the language? It's the Amiga's fault!

Because our trusty Amigas are capable of performing all kinds of wonderful and complex tasks, the designers had to build an operating system capable of managing it all. The complexity of the tasks mean that the operating itself is complex. It is the interaction between assembler code and the operating system that causes the problems for the eager learner, and not the ability to grasp the relatively simple 68000 mneumonics and addressing modes.

Amiga Shopper should have a long-term monthly series on assembly coding. This series would of course be unique because to my knowledge no other publication has a good assembly programming section of more than a page that actually produces a useful application.

For example, after the introductions of the basics, an application such as a text editor could be built in a similar fashion to Jason's AMOS Paint program or Toby's Address Book. In real life only a nutter would code a text editor in assembler, but the point is to teach would be assembler programmers enough tips, tricks and techniques to enable them to go off and write their own applications. The text editor example would explain, among other things: library accesses, setting up custom screens and windows, Intuition Direct Communications Message Ports, gadgets, requesters, text structures, menus and buffers.

So there you have it – the case for a regular assembly language tutorial.

Simon Nicoll
Milton, Portsmouth

So that's two votes for assembly language (and a good suggestion for an application). It definitely looks like we ought to be covering this field. Any more of you interested?

LOTS OF DETAIL

I expect that you would like to know that at least one reader is very happy with the new formula for the magazine. The old one was good, but there is an important improvement.

I hope that most of your readers are like me, interested in serious detail and not superficial funnies. For me the comparison review of *Wordworth 3* and *Final Writer* is how the job should be tackled – lots of detail.

One detail in particular was vital to me, but before I go further, let me tell you that I am an Amiga 3000 user, one of the very first, a retired financial expert, and now campaigning about economic theory. I have published a book, *Towards True Monetarism* (a damnation of the mad monetarism of recent times), and I did the typesetting myself with *Professional Page 3*, which I have since upgraded to 4.1 (where are the bugs? I have found none!) Print Coordination of Macclesfield did the imagesetting for me, with unbelievable speed, and TOP West the printing. The result is rather nice; better than the products of leading publishers. My only gripe was to quarrel with some of the kerns in the monotype typeface I was using. It is possible to change these, as Postscript files are plain language, but one undertakes when one buys a Monotype product not to alter it. So one has to go through the laborious process of applying to all occurrences of the offending combinations a tag with different tracking information.

I do an enormous amount of writing and my workhorse is *Protext*. Before the Amiga came along I used a Memotech and NewWord. *Protext* is a development of NewWord and has its lovely feature of conditional merge printing. I use that feature to insert addresses by merely typing the initials of the addressee. I also like the spelling checker method of *Protext*. It is far faster to use than any other.

But I do have occasional use for a graphics-based word processor. I possess *Excellence! 3* and *Wordworth 2*. *Excellence!* is a good program, but it is unreliable in printing unusual fonts. I bought Monotype Plantin for my book, a lovely classical typeface recommended by my publisher, but the *Excellence!* metric file does not quite cope. *Excellence!* is unique in having a quite reasonable style checker, though you need a thick skin to use it.

Wordworth is still limited to the standard 35 laser printer Postscript fonts, so I cannot use Plantin with it except in slow LaserJet 3 mode. But *Wordworth's* greatest defect is that only two headers and footers per document can be used, one for even pages and one for odd. For writing a book it is essential to be able to change headers. Having to have separate files for chapters makes indexing virtually impossible.

Your review therefore told me the vital pieces of information that I wanted to know. *Wordworth 3* does not support sections, nor extra Postscript fonts. *Final Writer* does, so I shall give it a try. No other review gave me this information.

Geoffrey W Gardiner
Knutsford, Cheshire

We always endeavour with our reviews to point out the details that are going to aid people in people make considered buying decisions, rather than pay lip service to a product as soon as it appears. I'm glad we've been of help.

OPTIMISM WANING

After waiting eagerly for issue 37 of *Amiga Shopper* to get my hands on the "real stonker of a program" (your description of the disk in issue 36) I find that it is just not there at all.

Ever the optimist, I thought to find the explanation for the missing disk somewhere within the pages of the magazine, but not a thing

was mentioned about it. So I find optimism waning. Is this *Amiga Shopper's* way of getting out of the cover disk war by advertising that a disk will be on a particular issue of the magazine, just to keep the sales figures up, but neglecting to include one. I hope that this is just an unfortunate incident, but it would have been nice for some explanation for the absence of the promised cover disk.

I would be very obliged if you could give me your views on this matter as I do not like being told I will be getting something when it turns out I am not.

Robert Peebles
Heddon On The Wall, Northumberland

Fair point – I'm sorry, I should have included an explanation. The fact of the matter is we just about had a deal tied up with a major software house to bring you this "stonker of a program". In the meantime, however, there was a shift in the power that be upstairs, and it was decided not to go ahead with the disk on this occasion. The basic policy, though, of supplying disks on an occasional basis, and only when we have something really special to put on them, still stands. We'll let you know about this next one in plenty of time.

YOUR GUIDE TO WRITING THE RIGHT THING!

In keeping with our policy of making sure this is the hottest, most intelligent and readable letters section in any Amiga magazine, we respectfully present a list of those topics which we'd love to hear your opinions on, and those which, let's be honest, are getting a little long in the tooth (and remember, we pay £25 for the best letter published each month):

LUSCIOUS LETTERS

- Buying Commodore
- Your dream Amiga set-up
- Strange uses for your Amiga
- Your dream peripheral
- The best PD program ever
- Computer porn

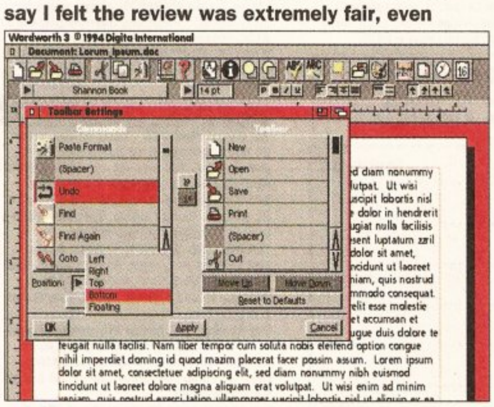
BORING BULLETINS

- The price of RAM chips
- Your friend's PC set-up.
- Cover disks
- Splitting the magazine in two
- Colour editorial
- Piracy

EXTREMELY FAIR, EVEN LENIENT

This is the first time I have written to a magazine letters column, but I have been stirred into action by *Wordworth 3*, which I purchased at its release on 10 March. This is the first time I have bought a computer product of any sort without first reading a review, being a user of *Wordworth 1* and *2* and trusting that Digita would once again come up trumps. It will also be the last time I do so – I have learned my lesson. I am extremely disturbed that a commercial software company can release software that is patently not tested or, which is worse, with known faults outstanding, into the market.

I read your review of *Wordworth 3* in issue 37, and the news item in the same issue. I have to say I felt the review was extremely fair, even



The initial release of Wordworth 3 was disappointing, but the corrected version promises to give Final Writer a run for its money.

lenient. I would have been tempted to be a little more unforgiving.

Releasing bugged software into the marketplace does only harm. It costs the developer, both in reputation and money. It costs the user, both in lost productivity and in having to investigate and report faults. It costs the Amiga, as it gets the reputation of being an unprofessional and cowboyish machine.

I understand, working in software development myself, that finding all the bugs in software is well-nigh impossible. But the fact that I found so many faults after only four hours' use tells me that Digita did not test sufficiently. I was extremely concerned by the "hand grenade in the water" technique to find faults quickly, expressed in the news item. Software developers should be building quality in to their products, not coding to obviously unrealistic timescales and then waiting for the uproar.

I know that commercial pressures are such that deadlines are all. But I received my update disks under two weeks after receiving the initial bugged version. Was it worth the damage to reputation and the cost of update?

Jason G Kennedy
Ipswich

To be fair to Digita, many products, when initially released on to the market, are plagued by bugs. The fact that *Wordworth* is such a high-profile package, I think, has made the disappointment all the greater.

In retrospect, I am sure the people at Digita had rather waited those extra two weeks, but my guess is the sheer economics of the situation forced them into launching when they did. Remember that the original, postponed, date was some months earlier.

Yes, *Wordworth 3* is bugged, but at least Digita have pulled out all the stops to get corrected versions out. I know that they are committed to providing a good product.

Look out for next month's issue, when we'll be comparing the updated version of *Wordworth 3* against every word processor available for the Amiga.

MORE THAN I THOUGHT

First of all many thanks for the excellent AMOS tutorial on *ASPaint*, which has taught me more than I thought it would. I don't normally follow tutorials in great depth – I mean I read them, but very rarely actually carry them out. My experience with *ASPaint* has made me realise what I've been missing, and that there's so much more to learn in tutorials than what's printed on the page.

With regard to the next tutorial, how about taking graphics production to another realm – animation? Now that we have a fully fledged paint program, wouldn't it be great to have a program that would enable the assembly of individual pictures into an animation.

The sort of thing I mean would enable us to add sound to individual frames and manipulate frames (individually or in groups) with some sort of cut and paste principle. If it utilised the AMOS screen manipulation commands as well we could put in options to fade and/or wipe between frames as well as an "onion skin" light table effect. I thought having the main screen as some sort of storyboard with icons and/or menus would be nice.

I know that some of these thins already exist, but then so do loads of paint packages. I appreciate that some readers may be getting a bit fed up of coding graphics applications and maybe want a change of tack, but after all graphics handling is a strong point of both the Amiga and AMOS.

As you can see this is something I've already thought about but it's really a case of not knowing where to start. I know what commands and AMOS principles could be used but not really how to implement them. I am particularly stuck on the sound part, but all this made me think that I may not be alone and it could make a great tutorial. It's got to be better than coding game after game, hasn't it?

Ryan Cartwright
Chigwell, Essex

Yes, it has. We've got no immediate plans for an animation player tutorial, but we have got something pretty damned special lined up in the AMOS department, if I do say so myself.

We've got a whole load of interesting projects waiting in the wings, which will demonstrate a diversity of important programming principles.

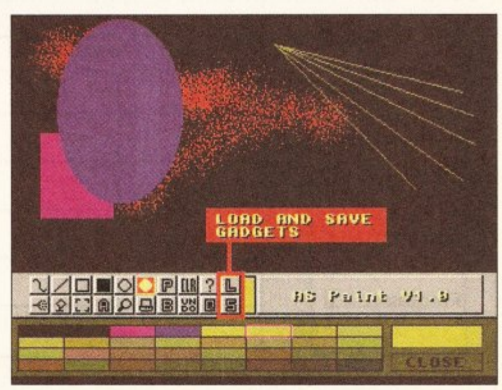
The first of these will be concerned with producing the sort of plasma graphics effects often seen in demos, and is pencilled in for next month. Get ready to, er, rap.

A CAUSE FOR ALARM

I'm rather disturbed to read on several bulletin board that Commodore have gone bust. I know these sort of rumours come and go, but their recent frequency seems to be a cause for alarm. Is there any truth to them?

Harold Trump
Swansea, Wales

No – turn to page 5 for the latest news.



ASPaint went down a storm with AMOS fans. Watch out for another great tutorial next month!

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A1200 120Mb HD, 1942 monitor, SAS C 6.4 Superbase Pro 4, Devpac 3, some games, books, magazines (Amiga Fromat 1-58), many disks, disk box £750 ono Alan ☎ 0737 247056 (evenings).

Power 1204 RAM board 4Mb 68881 and clock only 6 months old, boxed with manual, only £150 for quick. Paul ☎ 081 8036557 answerphone evening.

A500 2Mb great boxed games incl. Elite II and RFTS joystick, mouse and external drive, also Amiga Shopper issues thrown in. Offers around £325. Sam ☎ 0422 885173.

SAS C devlopment system with C++ version 6.5 with 6.51 patch disk. Boxed with all manuals etc £210. Simon ☎ 0705 781078.

AMOS Pro compiler original, boxed, in working order £15. Wanted PD/Shareware packet radio program for Amiga. ☎ 0226 286297.

A4000/030 2+4 215HD Philips 8833 monitor, boxed, nearly new, lots of software, joystick, manuals, forced sale £1,100. Maths co-pro 6882 50MHz never used, fits A4000 £100, will separate, buyer collects ☎ 091 3771411.

Amiga 500P, Philips CM8833 monitor, Cumana B drive, Star LC20 printer +KCS powerboad including DOS4, disks and manuals. Also joystick, games. Offers. May split. All boxed & VGC. Paul ☎ 0533 876953.

PC 286 emulator card for use with GVP A530 or HD8+ hard dirves. As new and complete £55 Peter ☎ 0969 23462 after 7pm

A1200 80Mb HD+4Mb RAM, Philips 8833 monitor, external drive, joystick, mouse, manuals, boxed, loads of software inc. Wordworth 2 + fonts. £750 ono ☎ 0536 418137 or fax 0536 418928 anytime.

Historic Scotland on ten disks includes maps text, pictures, music only £16. Requires 2Mb memory, A1200 OK. Send cheque PO to David Pailin, 1 WhinPark, Muirtown, Inverness IV36NQ ☎ 0463 242431.

8Mb RAM board for A1500/2000 populated to 2Mb cost £180 sell for £80 onon. Also Amiga C For Advanced Programmers £10. Advacned Amiga Basic wanted. Simon ☎ 091 2515218.

Amiga 1500 52Mb SCSI HD 5Mb RAM, GVP G-Force 030 combo board 40MHz, WB2, mouse, 2 disk drives, £650. Start LC10 printer £50. Peter ☎ 071 354 8213.

40MHz A1230 accelerator with 8Mb and FPU £500 Power 1204 4Mb RAM board FPU and clock for A1200 £155 ☎ 0203 444991.

A500, A590HD 3Mb, external floppy, CM8833 monitor, 120D printer, WB2.05, CrossDOS, Wordworth, SAS C 5.10, RKMs (except hardware) all very good condition. Aubrey ☎ 0772 626972.

DKB Megachip 2Mb Chip upgrade for A500 A2000/1500 £50, Power hand scanner V2 and software £50. Paul ☎ 081 769 0094.

2Mb A500 1.3, 2.04, AMAS, Action Replay MKIII, VIDI Amiga inc colour splitter, Digi View Gold, inc. 5the usual loads of games etc. £250 After 6 ☎ 0277 230139.

Vortex G-gate 486SLC25, cloppy controller £225 SIMMS: 4Mb/60ns Siemens gold-edged £120, externally connecting case/power for 3.5/5.25 FDD £19, monitor master (switch Amiga/SVGA card to multisync £29 ☎ 0703 868078.

BULLETIN BOARDS

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Amiga Tavern BBS 100% Amiga, hundreds of files online. Connected to Fidonet. All speeds up to 16.8K HST. Call now on ☎ 0455 840729. 24hrs. See you there.

Southend's largest Amiga BBS plus PC area! And a SYSOP that answers the pager, on-line 24hrs weekends, 7pm–7am weekdays, with great download ratios. Call today Den's Den BBS 0702 464818.

WANTED

Memory expansion board for a dataflyer 500 Hard Drive populated or unpopulated. Call Kenneth ☎ 0274 816613 (evenings).

CDs for A570 CD ROM. All subjects considered – must be reasonably priced. ☎ 0294 272768.

Canon BJ10sx autosheet feeder. Will pay £20. Call Simon ☎ 0532 750094.

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CONTENTS AT-A-GLANCE

AMIGA ANSWERS

How to read the keyboard with C and assembler

- Set up a professional DTP studio
- Amiga-PC file transfers
- Enhance your recordings to video
- Upgrade advice
- Buying advice for videographers
- Setting the right AmigaDOS path

USING THE ICONS TO FIND WHAT A QUESTION'S ABOUT

BEGINNERS Questions raising basic problems or dealing with elementary issues.

GENERAL General Amiga-related queries or questions that don't fall under other headings.

DTP Queries related to the whole area of Amiga desktop publishing.

MONITORS Questions about monitors, including television display problems.

HARDWARE Queries relating to general hardware, excluding kit covered by other headings.

BUYING Questions asking for buying advice in any area, hardware or software.

PRINTERS Queries about printers, printer drivers and hardcopy problems.

CODING Questions about coding (no matter which language).

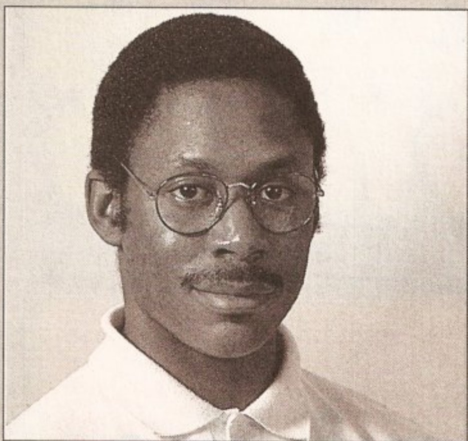
VIDEO Queries about using your Amiga with video hardware such as genlocks or digitisers.

MUSIC Questions about MIDI, sampling, music software and synthesisers.

SOFTWARE Queries about specific software packages or programs.

COMMS Questions relating to comms, including modem problems.

NO PROBLEM!



Are you suffering from Amiga problems? Graeme Sandiford and his team will sort you out.

Hello and welcome once again, to the area of *Amiga Shopper* where you can turn to find all the answers to questions concerning your Amiga. I am Graeme Sandiford, and it's my privilege, as *Amiga Shopper's* technical writer, to make sure that every last one of your problems is sorted out, no matter how simple or complex they may be. At *Amiga Shopper*, we want you to get the very best out of your Amiga. To help you achieve this ambition, we devote more space than any other magazine to this indispensable service, so please make the most of it, and keep your questions coming in. I will do my utmost to find a solution to all your problems.

If you come across any unfamiliar terms, turn to one of our jargon-busting boxes to receive an explanation. The problems are put in a wide context for everybody's benefit. The index on the previous page is your guide to the topics covered this month.

By now, you are probably familiar with our team of Amiga experts. **Mark Smiddy** is our AmigaDOS and floppy drive supremo. **Jeff Walker** is our desktop publishing, fonts and printer correspondent. **Gary Whiteley**, is a trusted expert on video applications and graphics. If you have a query about comms, we'll set **Dave Winder** on the case. **Toby Simpson** is our code clinician. If you've got problems with anything from C to assembler, try taxing his little grey cells. **Pat McDonald** is a man who knows all you need to know about CD-ROMs, hard drives and general hardware. Finally, we've got a man you can rely on when it comes to operating systems programming – **Paul Overaa.**

Let all your queries, problems, worries, or general tips and hints come pouring in. With a good tip you could be a tenner richer. Write to me and I will do my best to sort you out!

POOR VIDEO OUTPUT

I am working on what is perhaps an overambitious project. I am hoping to make a complete educational video which will consist largely of animations done on an A1200 using *Deluxe Paint IV AGA* in high resolution, video overscan. Some of the animations will be over 2Mb in size.

I am very happy about what I have produced so far and I believe that the quality of my computer animation is as good as, or even better than, similar work I have done professionally on film using normal film animation techniques.

The problems occur when I attempt to transfer the animations to video. The quality of the recorded video is poor: objects moving across the screen have a trailing fringe of colour; colours are degraded, particularly blues and violets; lines are blurred and the picture on the video tape has not captured the brilliance and sharpness of the original computer image. It is the same when played on different TVs and VTRs. It just isn't good enough.

I have been using a lead with 4 phono plugs labelled Video Out, Video In, plus 2 audio plugs going to a SCART connector. Having to use the Amiga's composite output is an obvious disadvantage because the picture is not as sharp as when using the RGB connector. I have been advised that an S-VHS video recorder would make a difference, especially if there were some way of taking the computer data via an RGB connector. Is this possible?

C.W. Carson
Chadwell Heath, Essex.

Using YC and S-VHS VTR will certainly improve matters, but there's no way that you'll get RGB output from your A1200 to record direct to such a beast. What you'll need is a good quality genlock, or encoder, capable of converting the Amiga's RGB output to YC video (as used by S-VHS equipment). I know RGB *looks* better, but you can't record it to video (at least if you don't have tons of money), so the sooner we forget that option, the better.

If you can afford the investment you could always get a component encoder and record to a professional format such as Betacam – which, to be honest, is really the only way that you'll get anything approaching film quality, which is presumably what you are hoping for.

I presume you are currently trying to record your animations to VHS, which is essentially a domestic video format, so it should come as no surprise that the quality is quite ropey.

The bad news is that getting really good quality output from an Amiga doesn't come cheap, so expect to pay out anything from £250 and up for a decent quality genlock or encoder. ***Gary***

JARGON BUSTING

RGB – Red Green Blue; a standard for video signals that provides better quality than composite or Radio Frequency signals.

Hard drive – like a floppy drive, but much bigger and faster. Also, the disk cannot be removed, so once the hard drive has been filled, it's either time to delete excess files or get another one.

Genlock – a way of slaving one video source (eg Amiga) to another (eg video tape) in order to synchronise their signals to allow stable wipes, mixes and other effects including overlay between the two sources.

Font – the group of letters, numbers and special characters that comprise one variation of typeface, eg: 12pt Times, 12pt Times Bold, 12pt Times Italic. Sometimes (mistakenly) used in desktop publishing to refer to a type family.

Partition – an area of a hard drive that has been separated off from the rest.

PRODRAW AGA BUG

Having got my A1200, using it mainly for home based DTP, I had a hard drive fitted and bought *ProPage 3* and *ProDraw 3. ProPage* seems to work fine, but with *ProDraw*, after drawing even the simplest of shapes or loading and manipulating any of the clip art, the pointer becomes jerky, none of the pull-down menus work, and a software failure occurs. I had expected both of these programs to be heavy on memory, so I invested in a 4Mb+FPU expansion board. This does appear to have speeded things up, but the *ProDraw* problem remains. Surely a program like *ProDraw* can work happily with 6Mb of total memory fitted? I have tried phoning Gold Disk, but they only seem to have an answering machine.

Paul Clements
Brighton

The problem isn't caused by lack of memory. It's simply a nasty bug in the early version of *ProDraw 3* which does not work properly with Amigas that have the AGA chip set (A1200/4000). Early last year Gold Disk released a patched version (3.03) that fixed the problem, so you should endeavour to contact Gold Disk and ask for that free upgrade. The phone number to call is the one in Canada ☎ 0101-416-602-4000, or fax them on 0101-416-602-4001. If you are not a registered user (if you have not filled in and returned your *ProDraw* registration card, I mean), Gold Disk may well ignore your pleas for help. ***Jeff***

MEGA CONFUSION

I have just bought *Wordworth 2* for my A600HD, which I have owned for six months and is fitted with a 20Mb hard drive and 515,864 bytes of total memory, 233,592 bytes of which is chip memory.

On the WWPrinterFonts disk there is an install program, which installs it on to hard drive. I have followed the instructions in the manual and

when it is finished it says "Installation OK", which means I have installed it OK. But when I try to use it, I keep getting "Not enough memory to run WW" appearing.

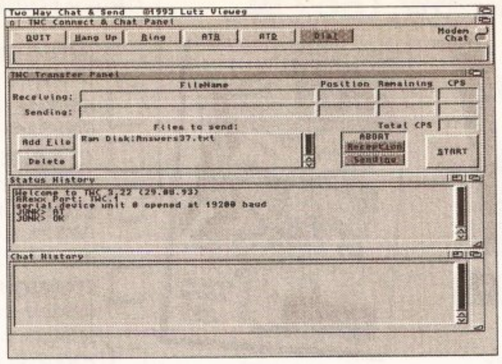
In the manual it says that if *Wordworth's* installation fails it may be due to insufficient space on the Workbench partition, where the fonts drawer is located, and that I will need to create a new fonts drawer on a different partition, copy the existing fonts into the new drawer and assign FONTS: to the new drawer. This modification should be made before installing *Wordworth* and incorporated into my startup-sequence.

I have tried this, but to no avail. Also, I have enough memory in the Work partition where *Wordworth 2* goes. All I can think I am doing wrong is the modification in the startup-sequence. Could you please help me before it drives me mad?

Martyn Bater
Montpelier, Bristol

You've done nothing wrong, you've simply got confused over what is and isn't memory. The numbers displayed in the Workbench title bar are how many bytes of memory you have free. I'm guessing that the amounts of memory you specified in your letter are these two numbers, as the A600 comes with 1Mb of memory (1,048,576 bytes) and your two figures add up to about 700,000 bytes, which is the amount of free memory you would expect to have after booting Workbench.

The 20Mb on the hard drive is not memory, it is storage space. Programs are loaded from the storage device (hard drive, floppy disk...) into memory, and it doesn't matter how big your hard drive is: if you've only got 1Mb of memory, you've only got 1Mb of memory. *Wordworth 2* requires at least 1.5Mb of memory in order to run, so your solution is to buy a 1Mb memory expansion and slot it into the expansion port underneath the A600. ***Jeff***



Among many useful things, Twin Express tells you how to wire a null modem cable!

AMIGA – PC CONNECTION

COMMS

I have an Amiga and a PC and I'm trying to get them to talk to each other. I want to transfer files between the two computers. I have made a null modem cable and connected the Amiga serial port to the PC Com2 port. I've tried using *NComm*, but it seems to want an actual modem to operate. My Windows

SERIOUS DTP FOR WOULD-BE PROFESSIONALS

DTP

As I intend to get seriously involved with Amiga-based professional desktop publishing, I'm in desperate need of some suggestions and advice.

1.) What is the minimum configuration, hardware-wise, for a professional Amiga-based DTP set-up?

2.) Is the Amiga capable of being connected directly to a typesetter or imagesetter? Are these PostScript-compatible devices?

3.) What are the processes involved concerning 4-colour separations? Can it be done on the Amiga, outputting to a mono PostScript laser printer, or should I definitely always use an output bureau?

4.) How am I going to transfer files to an output bureau? SyQuest removable hard drive? Floptical? Magneto-optical?

5.) Can you propose a complete and viable professional solution for Amiga-based desktop publishing?

Steve Siopoulos
Athens, Greece

OK, Steve, I will answer all your questions, but before I start, let's get one thing straight; if you imagine that setting up a professional desktop publishing system based around an Amiga is going to be cheap, then get your head out of the clouds, because it isn't. It certainly can be done more cheaply than on other platforms, and to almost the same high standard (the Amiga lacks one or two bits of specialised software, most notably an Amiga equivalent of *Adobe Photoshop* or MicroGrafx's deeply wonderful *Picture Publisher*), but it is still going to cost a few thousand pounds.

1) The *smallest* Amiga you require is an A4000/030, but an 040 would be much, much better because it is much, much faster. You will be best off with at least 1Gb (one gigabyte) of hard disk storage space because typical desktop publishing files – 24-bit graphics, PostScript fonts, clip art, documents, templates and so on – consume a lot of disk space. Fitting a large drive like this will require purchasing a SCSI controller card (which you'll need for other things anyway; for fitting a CD-ROM drive for example), and if you want the drive to run quickly, as quickly as it will have been designed to run, then you will require a proper SCSI-2 controller as opposed to a cheap SCSI-2 compatible controller, which will be a SCSI-1 controller that understands SCSI-2 commands, but cannot execute them at the same speed.

You can cut down your storage space requirements (get away with a smaller hard drive) by regularly backing-up to floppy or tape streamer, but this is time consuming and, in the professional world, time is money. Only you will really know which will be the best trade-off.

You require at least 18Mb (eighteen megabytes) of memory because typical desktop publishing tasks require acres of the stuff. The more memory, the better. I have 26Mb and still run out of memory at times, forcing me to use the *GigaMem* virtual memory program, which gives me more memory, but slows processes down. And not everything will work with virtual memory.

You will almost certainly require a flatbed colour scanner, and you will definitely require a PostScript mono laser printer on which to proof your work – mistakes will prove very costly if they are discovered by the output bureau.

Lastly, you will definitely require a decent multiscan monitor – 17in or larger would be best. Trying to desktop publish professionally on a TV set or cheap monitor is like trying to draw with a fine pencil on a brick wall – you can do it if you really stick at it, but it is going to take you time to become an expert at it, and everyone who passes will laugh at the sad plonker who doesn't understand that fine pencil strokes show up best on fine art paper. As most decent multiscan monitors do not sync down to the Amiga's 15.6 KHz refresh rate, the most professional option may be to buy a *normal* multiscan monitor and fit it to a graphics card like Retina or Picasso II, which will also of course enable you to work with true colour 24-bit graphics on the screen. (That's the route I took.)

2) Yes, you can connect an Amiga to an imagesetter if you really need to, but it will be much more convenient for both you and the output bureau if you simply give them your PostScript files, which the bureau will then download straight to the PostScript compatible imagesetter or other device.

3) The 4-colour printing process is an extremely complex subject. There are such a vast number of variables involved that it is much, much easier for the inexperienced desktop publisher to get it wrong, than it is to get it right. Consequently you would be better off taking advice from your output bureau regarding screen angles and densities, undercolour removal, page sizes and much more.

There is absolutely no replacement for experience in this area, and you can learn a lot by experimenting with output to your PostScript laser printer. At a pinch you could get away with producing your own separations on film on a 600 dpi laser printer, but the results are not going to be comparable to those you see in the books, magazines and leaflets all around you. For full colour, you really need the higher resolutions that imagesetters offer.

Both of the Amiga desktop publishing programs (*PageStream* and *ProPage*) are able to produce 3-colour (CMY) and 4-colour (CMYK) separations, as well as mechanical or *spot* colours.

4) How you transport the files to the bureau will depend on what format that bureau is willing to accept them in. Most bureaus will accept SyQuest cartridges, but some will accept only Mac-formatted SyQuest cartridges, which means fitting a Mac emulator to your Amiga. Alternatively, many bureaus will accept data down the phone line, which is a much more convenient way to do it – and, with a fast modem, it is nowhere near as expensive as it might at first appear to be. If the files are not large, you could transport them on MS-DOS format floppy disks, of course.

5) Certainly. My consultancy charge is £100 per hour, plus expenses. (What's the weather like in Athens at the moment?) ***Jeff***

terminal program supports both XModem and Kermit protocols, but neither seem to work. Is there a simple way to transfer these files?

Guy Lingard
RAF Bruggen, BFPO 25

Yes there is. You need to get hold of a program called *Twin Express*, which is available for both your Amiga and PC. Once installed, you will be able to easily transfer files between the two computers at a rate of up to 115,200bps. The program comes with comprehensive documentation, it even tells you how to correctly wire a null modem cable, and is Shareware so it won't break the bank. You should be able to get *Twin Express* from any good BBS or FTP site, alternatively it is available on CIX or from ICPUG. ***Dave***

WORN OUT

I sometimes feel that letter quality printing with my Citizen Swift 240C is not as good as it should be. This letter was printed with it. Do you think it is up to scratch?

Gary Glencross
Whitelees, Cumbernauld

Scratch is the word. Your printer is suffering from a very, very worn out printer ribbon. If you continue to use the printer with this worn out ribbon you will damage its print head. Buy a new ribbon – if you don't it could cost you hundreds in repair bills. ***Jeff***

QUESTIONS, QUESTIONS

I have a few question to ask:
1) What is an IDE/AT-Bus controller?
2) What accelerator would you recommend for my A500+?
3) In your review of OpalVision you said that an A500/A600 version was planned. Is this still true?
4) Is it possible to use DCTV with *VistaPro*?

James Allard
Crediton, Devon.

1) Integrated Drive Electronics – hard drive controller for IDE-type hard drives.

2) Personally I wouldn't, because I reckon that if you want to do the graphics stuff you mention, then you'd be better off spending the money on an Amiga 1200, some extra memory and a hard drive. Then you'd have graphics display ability equal to DCTV's (although you won't have the software), and a reasonable turn of speed as well. Adding a suitable maths co-processor (68882) will also help considerably when calculation-intensive tasks (such as ray-tracing and rendering) are being carried out, so carefully consider which A1200 memory card to get and whether it can carry a co-pro or not.

On the other hand, accessories for Amiga 500s are relatively cheap, as the machine is, like it or not, slowly becoming obsolete. It will take a few years yet to wind down A500 support, but inevitably it will go the way of the A1000. Fondly remembered, and still used by many of the original owners (who will also have bought at least one other Amiga), the A1000 now has little support and few peripherals available.

If you must buy an accelerator for your A500, then consider GVP's offerings. They're well built and offer extras such as more memory space and on-board SCSI controller (for hard drives).

3) To be honest, I don't know. OpalVision's plans seem to have suffered for various reasons, not least the shortage of surface-mounting components, which is why the Video Processor and other well-publicised modules have been so drastically delayed. So I expect the same applies to the projected external version, though whether it will ever appear may now be a subject for conjecture.

4) Regarding DCTV yes, *VistaPro's* output can be used with DCTV. In fact, if I recall correctly, one of the demos that used to come with DCTV was an animation generated from *VistaPro* images. However, *VistaPro* won't generate DCTV animations directly, so you'll need to use one of the utilities provided, or get hold of a shareware program like *Rend24* or *MainActor* which can construct DCTV anims from rendered images. ***Gary***

JARGON BUSTING

PC – IBM PC compatible computer based on one of the Intel 8067 or 80xxx series CPUs, and with similar hardware/software configuration.

Maths co-processor - a chip which sits alongside the Amiga's central processor and performs complex mathematical operations as single machine code instructions. This method is much faster than using many more of the central processor's similar instructions to achieve the same effect.

Printer driver – a program that sits in between any applications producing output, or Workbench itself, and the printer. It converts any codes describing text and graphics format into a form that can be understood by the printer it was written for.

SCSI – Small Computer Systems Interface is the standard used for connecting hard drives, CD-ROM drives and tape back-up units to computers.

CYCLONE STICKLER

I recently bought a copy of *XCopy & Tools* and the only item I cannot use is *Cyclone* because I have not got an external drive fitted. Is there any way of overcoming this.

T.A. Robson
Eastborne

Cyclone is intended to make duplicates of protected commercial disks and using it in this context is against the law. I'm sure you already know that anyway and the only way to use it is to get an external drive. Sorry. ***Mark***

UPGRADE!

There appears to be no printer driver available for the Epson Stylus 800. Epson is unable to help because I don't have a PC. *Studio Printer* Software is no good because I only have Workbench 1.3. I am able to use *Protext* 4.22 to produce text using its Nec P2200 driver, but I cannot print from any graphics utilities obtained from magazine cover disks. How about an article?

E Donnison
St Athan, S Glams

I don't need to write an article to say that unless you are prepared to spend some money, there is nothing you can do – you will be stuck with a printer that you cannot take full advantage of. The only solution is to upgrade your operating system to Kickstart/Workbench 2, or better, and then you can use the *Studio* drivers and preferences and printing programs with your *Stylus 800*. You will also then be able to upgrade to *Protext 6*, which also has dedicated support for the *Stylus 800*.

If there was another solution I'd tell you but, honestly, there isn't. You and many thousands of other UK Amiga owners are sitting in this *old-operating-system* boat. While it has not quite sunk yet, before the end of this year, whether you are still sitting in it or not (whether you or I, or anyone else likes it or not) the 1.3 boat will be gone and forgotten.

Workbench 2 was released more than four year ago. There are a fair number of home computers that haven't survived in the last four years, let alone operating systems. It's called *Progress*, and the horrible thing about *Progress* is that you can't stop it. ***Jeff***

INFORMATION PLEASE

I recently bought *Get The Most Out Of Your Amiga 1993* – a very useful book. My problem is that I cannot get the disks supplied to work. When I load the disks via Workbench I get a message "Unable to open your tool C:MORE". Can you please tell me where I am going wrong?

Could you also tell me the difference between internal and external hard drives and which kind is the best?

R.I. Newling
Wallington, Surrey

In the first part of your problem I take it that the file you are trying to execute is a ReadMe file, which is in turn attempting to launch a program called *More* from the C: directory, so that *More* can be used to read and display the ReadMe file. The trouble most probably stems from the fact that *More* isn't in your C: directory. Check the book disk carefully to see if *More* is on it. Then open a Shell and type "ASSIGN MORE: <DirectoryPath>MORE" (without the "" signs). Use <DirectoryPath> to point to where *More* lives – for instance, ASSIGN MORE: DF0:C/MORE. Once the program knows where to find *More*, then your file should have no problems whatsoever in reading OK.

Another way to solve this problem is to edit the Readme file's .info file so that it always uses *More* as its default tool. Do this from the Workbench by first selecting the ReadMe file's icon and then pressing Left Amiga and I together. The icon's information screen will appear. Edit the Default Tool line to read <DirectoryPath>MORE (e.g. DF0:C/MORE). Then click Save. Every time you activate the ReadMe file now it will know where to find *More*.

Just to give you an extra example, I always change references to *More* to read *PPMore* instead because I prefer the PD *PPMore* program to the *More* program supplied by Commodore. So my Default Tool for the ReadMe file would read C:PPMORE. It is also possible to use a word processor or Notepad to read the files.

And now regarding your second question – the most important difference between external and internal hard drives is that the latter are mounted *inside* a computer, whilst the former sit outside the computer, usually with their own case and power supply. Functionally, they are no different, though external drives usually cost more because of the

extra case and PSU required. *Gary*

DIFFICULT DELETION

GENERAL

Help, I've deleted ENVARC ARC from my prefs drawer, I think. The drawer is visible under 'Show all files,' but I'm unable to save any customised prefs. I've tried reloading Workbench from my original disks, but to no avail.

Keith Crozier
Camberly, Surrey

Whatever you've done, rest assured that it will be simple to fix. The trouble, as always, is that trying to solve these things from a distance, ie without being near enough to play around with the machine, is like trying to drive with your eyes shut! Checking your directory structures, assignments and startup-sequence commands were immediate things that crossed my mind. I even wondered whether you might have recently added an AmigaDOS lock command to one of your startup-sequences, or whether on start-up you are now auto-running any utilities which might do this automatically.

The thing that really worries me is that, irrespective of what you did, or did not, originally delete, you say you have re-installed Workbench but the problem is still present. This suggests to me that your Workbench re-installation just didn't do its job and I wonder whether this might be because you tried re-installing it on to a partition that had your partly deleted Workbench already in place.

Since there's some doubt about what you did actually delete, I suspect that the simplest solution would be to re-install Workbench from scratch, preferably on to a cleaned (ie emptied) partition. It might help if you had a local friendly Amiga guru (try your local shop) with you when doing this, just to make sure things go smoothly. Before this, however, you could try booting up from *floppy* copies of your original Workbench disks just to confirm that you can use **Preferences** normally with these disks. *Paul*

WOULD-BE EDITOR

BUYING

I am planning on buying an Amiga later this year for the following purposes (in order of importance):
1) Video editing and titling, etc.
2) Word processing
3) Accounting
4) Games

I would appreciate your advice as to the specifications I will require – eg hard disk, RAM etc and the software packages that will enable me to edit and title my Hi8 productions.

Ronald J. Wylie
Kirkcaldy, Scotland

I don't want to shatter your illusions, but I should

CODE CLINIC

Problem: Reading the keyboard.
Author: Anthony Taylor, Selby, North Yorks.
Language: Assembly Language

Anthony is trying to get keyboard input using a custom window. Previously he had used a Console window, and the routine I'll show you below worked fine. Then, when he moved on to using custom windows, the results were less reliable. There was general window corruption and, in addition, the routine did not correctly detect key presses. Let's take a quick look at it:

```
SPECIAL:  equ     $bfec01

key:      move.l  #$5b,d0  ; Code for F4

_look:    cmp.b   SPECIAL,d0
          beq     _load
          add.b   #$02,d0
          cmp.b   #$59,d0
          bne     _look
          bra     key

_load:    ...
```

Firstly, I'm not sure what the above code is meant to do. We start with key F4 (5b is actually F3, so this is also a bugette), and then add 2 to it, looping through all the keycodes, and round again to 59. In fact, we will check every single possible odd code from $01 to $ff, which is 128 of them, so any one of 128 keycodes could cause this routine to fall through to the **_load:** label. Secondly this program is doomed to failure anyway because it reads the $bfec01 register. Talking to the keyboard on the Amiga is a complex affair involving special serial communication and handshaking to fetch actual key-codes. The Amiga Operating System will do this for you, and reading the $bfec01 register is not guaranteed to work, as you don't know what value is going to be there at the start. I knocked up this little C program to remind myself of how the $bfec01 register works:

```
#include <stdio.h>

#include <exec/exec.h>

void main(void)
{
```

READING THE KEYBOARD WITH C

```
/****************************
 *
 * Key reading demo for a custom window, Save as "window.c"
 *
 * (C) Copyright Amiga Shopper 1994, by Toby Simpson
 *
 * To Compile using Dice:
 *  dcc window.c -o window
 */

#include <stdio.h>

#include <exec/exec.h>
#include <intuition/intuition.h>

#include <clib/exec_protos.h>
#include <clib/intuition_protos.h>

void main(void)
{
  struct Window *my_window;
  struct IntuiMessage *imsg;
  BOOL  done = FALSE;

  /*
  ** Open our window. This call will need to be modified to
  ** use OpenWindow for 1.3 and below users:
  */
  if (!(my_window = OpenWindowTags(NULL,
      WA_Title,      "Keyboard Test Window",
      WA_CloseGadget, TRUE,
      WA_Width,       200,
      WA_Height,      100,
      WA_Top,         20,
      WA_Left,        20,
      WA_IDCMP,       IDCMP_VANILLAKEY | IDCMP_RAWKEY | IDCMP_CLOSEWINDOW,
        TAG_DONE)))
        {
        printf("Cannot open window\n");
        return;
        }

  while (!done)
    {
    WaitPort(my_window->UserPort);

    while ((!done) && (imsg = (struct IntuiMessage *)GetMsg(my_window-
>UserPort)))
      {
      /*
      ** We have a message, process it accordingly:
      */
      switch(imsg->Class)
        {
        case IDCMP_CLOSEWINDOW:
          /*
          ** Close gadget pressed:
          */
          done = TRUE;
          break;

        case IDCMP_RAWKEY:
          /*
          ** Raw key-code:
          */
          printf("Qual = %lx, Raw = %d\n", imsg->Qualifier, imsg->Code);
          break;

        case IDCMP_VANILLAKEY:
          /*
          ** Vanilla key-code:
          */
          printf("Qual = %lx, Van = %d\n", imsg->Qualifier, imsg->Code);
          break;
        }

      /*
      ** Processed message, so now reply to it:
      */
      ReplyMsg((struct Message *)imsg);
      }
    }
  /*
  ** All done, now close window:
  */
  CloseWindow(my_window);

  return;
}
```

point out that to edit your Hi8 productions, you'll need more than just an Amiga and some software – you'll also need another video deck to record the selected video clips to, and a monitor so as to see what you are doing. The extra video deck usually has to be able to be controlled by an infrared link.

If you want titles overlaid on your video, you'll also need a genlock which is capable of accepting YC video signals (as produced by your Hi8 camcorder) if you wish to get the best quality. So before you even buy your Amiga, you must also make provision for extra hardware that is likely to cost you at least £1000 for good stuff (including a simple, low-cost edit controller such as Gold Disk's *Video Director* or Scala's *ECHO EE100*).

Then you'll need some titling and graphics software. For smooth scrolling titles and credits without many frills, I'd recommend *Scroller 2*, though for a wide range of useful features and functions, including many fonts and transitions, scrolling/crawling text and easy text layout, your best bet is probably *Scala Classic*. For graphics and animation get either Electronic Art's *Deluxe Paint IV AGA* program or Digital Creation's *Brilliance*. So that's probably another £200.

With regard to your planned Amiga, I'd also recommend that you try to provide it with at least 2Mb of RAM, if not more, and a second floppy drive, as well as an RGB monitor. A hard drive will come in useful in the long run, but there's no point in going completely gaga at the beginning, so plan on buying this later, when you can afford it!

To sum up, you'll need:

1) An Amiga with at least 2Mb of RAM, 2nd floppy drive and RGB monitor. If you want a new Amiga go for an A1200, otherwise consider a second–hand Amiga 1500 or 2000.
2) A genlock (eg GVP's G–Lock or Electronic Design's YC Genlock)
3) An editing package such as *Video Director* or *Scala ECHO EE100*.
4) Titling software – *BAS2* and/or *Scala Classic*.
5) Graphics and Animation software – *DPaint IV AGA* or *Brilliance*.
6) A Hi8 or other YC video deck controllable by infrared, plus an extra monitor.

And that's just for the video side. Happy spending. ***Gary***

AT TRICK

When I use the Shift key with the 2 key to get double-quotes, I get an @ character shown on the screen. Is this just my A1200? Can I fix it as I can't use many of the commands in GFA-BASIC?

Alexis Vallance
Chatburn, Lancs

You have American selected as the Keyboard Type in the Input preferences editor. You need to select

```
char *keyboard_reg = 0xbfec01;
long read_value;

while (TRUE)
  {
  read_value = *keyboard_reg;
  printf("%lx ", read_value);
  }
}
```

This simply piles up the values that appear in the BFEC01 register as quickly as it can. If you try using this, you'll have to press CTRL-C to get out of the routine, as there is no exit code. With this little program it's easy to see what is happening. Whilst a key is held down, you get an odd number, and when that key is released, an even number exactly one less than the keycode, is present. What you're actually seeing is data from the keyboard processor, and Anthony's program is effectively "stealing" this information without communicating with the keyboard, or telling the OS about what it is doing. Keys read in this way are a bad thing, especially if you're getting input for a window, as even if your window is not selected, it will still receive full keyboard information, and this may not be accurate. Normally, when the keyboard sends a byte of information, an interrupt is generated which tells the Amiga OS to read and process this data. If nothing special is happening (Like CTRL-AMIGA-AMIGA reset sequence) this data will consist of "Key Up" and "Key Down" information. The OS will handle all of this for you, including proper key debouncing, and since it is on an interrupt it will never miss key-presses. The assembly language routine at the top cannot promise any of this, and also won't respect the user's keyboard map setting.

If you're programming using the OS, there are a selection of methods of getting input from the keyboard. One is to listen for IDCMP_VANILLAKEY and IDCMP_RAWKEY events, which is the way that most custom windows will take key-presses for gadget shortcuts, and the like. Alternatively, if you want the flexibility of full console input/output in your custom window, you can open and use the "console.device". This is explained in the Devices Rom Kernal Manual (Edition 3), one of the official Amiga programming books. For most people, however, who wish to detect a few key-presses now and again, like "Press ESC to close window..", the former method, using window IDCMP_ messages, is by far the easiest and least work.

Let's look at an example of this. The C language program one the previous page opens a window, and monitors for keyboard events, both RAWKEY and VANILLAKEY. RAWKEY events are raw key-press codes (which is to say, unprocessed, or "not cooked"), and the Vanilla ones have been passed through the currently selected key-map, and are in ASCII. In addition to the keyboard events, the program also watches the qualifiers, such as SHIFT, and CONTROL, and shows which of those were held down with the appropriate key. It is designed to work on Anthony's setup of an A1200, but will work with any Amiga with 2.04 of the OS or above. To make it work under 1.3 involves changing the OpenWindowTags call to run with OpenWindow instead. Consult the AutoDocs for information on using the OpenWindow function.

The program has been tested using DICE and SAS/C (you will of course need the Commodore includes to compile and run it successfully). It produces an interesting result, as you will be able to see exactly what information is presented to the window. The qualifiers can be decoded by looking at the file "devices/inputevents.h", which explains which bits mean what.

Try pressing lots of keys, including Shifts and Controls, and you will see how the Vanilla information differs from the Raw. I have given the program in C because this sort of routine is far easier to write, use and debug in C. Converting it to run in assembly language is really quite easy though, but of most interest to Anthony will be the input event loop itself, so I'll just go through that in detail.

In the assembly language listing example below, SYS is a macro which calls exec.library routines.

In that assembly language example, I'm using the same window pointer name as in the C program below, "my_window", so to get it to work you'll have to open a window and store the pointer to it in a variable called "my_window" or change the above. Assuming Anthony already has his custom window opening working well, this should slot in really easily.

It's important to remember, however, to ask your window to watch for the appropriate three IDCMP flags: IDCMP_CLOSEWINDOW, IDCMP_RAWKEY and IDCMP_VANILLAKEY.

Once again, the problem demonstrates that you're better advised to use the OS functions rather than relying on reading registers directly.

AND NOW WITH ASSEMBLER

```
;  SYS:         macro
;               move.l   $04,a6
;               jsr      _LVO\1(a6)
;               endm

Main_Loop:      move.l   my_window,a0
                move.l   UserPort(a0),a0
                SYS      WaitPort          ; Wait for message to arrive

;
; — Something has arrived at our port: ....
Message_Loop:   move.l   my_window,a0
                move.l   UserPort(a0),a0
                SYS      GetMsg            ; Get message
                tst.l    d0
                beq.s    Main_Loop         ; All messages processed.

;
; — Process this message ....
                move.l   d0,a1
                move.w   im_Code(a1),d1    ; Fetch message code.
                cmp.w    #IDCMP_CLOSEWINDOW,d1
                beq.s    Quit_Program      ; Close gadget pressed
                cmp.w    #IDCMP_VANILLAKEY,d1
                bne.s    Not_Vanilla
                bsr      Process_Vanilla   ; Process vanilla key events
Not_Vanilla:    cmp.w    #IDCMP_RAWKEY,d1
                bne.s    Not_Raw
                bsr      Process_Raw       ; Process raw key events
;
; — All done, reply to message and check for more ....
Not_Raw:        SYS      ReplyMsg
                bra.s    Message_Loop
;
; — Exit program ....
Quit_Program:   SYS      ReplyMsg          ; Reply to close message
                rts
;
; — Routine to process vanilla keys ....
Process_Vanilla:         rts
;
; — Routine to process raw keys ....
Process_Raw:    rts
```

the British keyboard type. *Jeff*

SOUR SUGAR

PRINTERS

I own an Amstrad PCW 8512 word processor and printer and I would like to use the Amstrad printer with my A1200.

I know that the printer cannot be connected directly to the Amiga, but is there a cable or connector that will enable me to join the two together?

Ben Lear
Newport, Staffs

Afraid not, Ben. The Amstrad PCW printer has a totally non-standard interface and will work only with the Amstrad PCW computers. *Jeff*

BAD DISK DRIVE

HARDWARE

I have a Cumana external drive which seems to have developed a slight bug. When it attempts to read a disk, it occasionally appears on the Workbench as "DF1:BAD", but this clears if I remove and re-insert the disk. Similarly, the drive also appears to think it has a disk mounted when it is empty – something that only manifests when the disk is removed. Any ideas?

Paul Law
Unstone Green, Sheffield

This is a nasty one because it could just as easily be caused by a failure inside the Amiga itself. I suspect the drive is at fault, although it is impossible to tell exactly without looking. The quick way to find out is to have the drive tested on a different machine and see if the same thing happens. If the drive is faulty it may be repairable, but with the prices of external units falling to around £50, it may work out cheaper to replace the whole thing. Both faults you describe probably lie in the DiskInserted latch mechanism and this is controlled directly on the drive electronics: something only an engineer could identify or repair. *Mark*

UNCONNECTED HARLEQUIN

HARDWARE

I have a Harlequin board, but the plug at the back doesn't fit the leads I have. Where can I get suitable leads and equipment for genlocking 24-bit graphics and video on to a VHS video recorder?

A. Sharp
Catford, London

You should really contact Xi Electronics, the makers of the Harlequin, and get some advice from them. Their address is 9 Grey Craigs, Cairneyhill, Fife, KY12 8XL, Scotland, ☎ 031 229 8428. They ought to be able to sort you out far better than I can. *Gary*

PUBLISHER POSER

SOFTWARE

Reading A Grahame's problem in Issue 36 (p 39), I too had the same problem with *The Publisher*. Your solution was to remove the memory expansion, but my A1200 does not have a memory expansion fitted. I have tried both the original disk and the version that came on a cover disk, and have come to the conclusion that *The Publisher* will work only on A500 machines. Can you help?

Nick Hobbs
Sheffield

It wasn't a solution Nick, it was just a suggestion because I have had *The Publisher* running on both my Workbench 3 A4000 and my Workbench 2 A3000 and cannot duplicate your problem. I have discovered one thing, though – if your Workbench screen mode is one of the new Workbench 3 ones; in other words, if your Workbench screen mode is not a standard non-overscanned PAL:High Res or PAL:High Res Laced, then *The Publisher* (on my machines) crashes spectacularly upon running. Nothing I can do about it; it's not my fault. I'll wave my magic wand if you like, but it's never worked yet (more bugs, I don't know – that'll teach me to buy a cheap magic wand...) *Jeff* AS

FILL IN AND GET US TO ANSWER YOUR QUESTIONS

If you send in a question for the Amiga Answers experts, please fill in and include the form below (or a photocopy if you don't want to cut up your magazine). And please, also make sure that you include all the relevant details – version numbers of software and so on – so that we have the best chance of helping you. If you have several questions in different fields that should be addressed to more than one of our experts, please send in your queries on *separate* forms.

Send your form and question to: Amiga Answers, *Amiga Shopper*, 30 Monmouth Street, Bath, Avon BA1 2BW.

Name: ____________________

Address: ____________________

Your machine:

A500 ☐ **A500 Plus** ☐ **A600** ☐ **A1000** ☐ **A1200** ☐
A1500 ☐ **A2000** ☐ **A3000** ☐ **A4000** ☐

Approximate age of machine: __________

Kickstart version (displayed at the "insert Workbench" prompt)

1.2 ☐ **1.3** ☐ **2.x** ☐ **3.x** ☐

Workbench revision (written on the Workbench disk)

1.2 ☐ **1.3** ☐ **1.3.2** ☐ **2.04/2.05** ☐ **2.1** ☐ **3.0** ☐

PCB revision (if known). Do not take your machine apart just to look for this! __________

Total memory fitted (see AVAIL in Shell for Workbench 1.3) __________

Chip memory available (see AVAIL in Shell) __________

Agnus chip (if known) __________

Extra drive #1 (3.5in/5.25in) as DF__: Manufacturer __________

Extra drive #2 (3.5in/5.25in) as DF__: Manufacturer __________

Hard disk: ____Mb as DH__: Manufacturer __________

Extra RAM fitted – type, size in Mb and manufacturer __________

Details of any other hardware which could help us to answer your question:

Now, use this space to describe your problem, including as much relevant information as possible. Please continue on a separate sheet if necessary.

AS 38

Straight Talk

Bob Fisher of NOVA Design, the creators of applications such as ImageFX, shares his thoughts with our man in the States – R Shamms Mortier.

Have you heard of a separate class of Amiga software known as "Image Processors"? In that class three packages stand above all the rest: ASDG's *ADPro*, BlackBelt System's *ImageMaster*, and NOVA Design's *ImageFX* (marketed by GVP). What an image processor does is to apply specific user selected alterations to a picture, or on a frame of animated video that the Amiga has grabbed. *ADPro* and *ImageMaster* have been in this game the longest, with *ImageFX* being the newest addition to the pack.

One should not, however, confuse "new" with "novice", because *ImageFX* has a wealth of features vital to today's computer animation workshop, and astounding in scope for the computer graphics hobbyist as well. All three of the packages have very different interfaces, with the *ImageFX* interface being the most inviting and easiest to comprehend for the new user. This is due to NOVA Designs concentration on making and keeping their software match the Amiga's capability in the realm of visual, rather than verbal, interface design. Even without a manual, the use of *ImageFX* follows an intuitive pattern of interaction, making constant reference to the manual unnecessary.

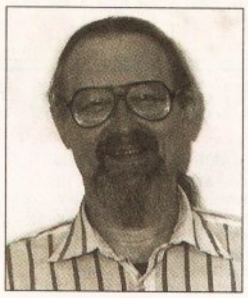
After a recent release of an upgraded 1.5 version of their software, NOVA Designs (and their marketing arm GVP) are getting ready to market the 2.0 version, a very major upgrade anticipated with excitement by the Amiga community worldwide. This is a good time, then, to contact the folks at NOVA for a few choice statements on both their software and its planned enhancements, as well as reflections upon the state of Amiga image processing and beyond. This interview with Bob Fisher, the Marketing Director and one of the three owners of NOVA, was conducted by phone, modem and FAX in mid-March, 1994.

Bob, can you tell us when NOVA was born, and about the range of Amiga products that it gave birth to?

Nova Design was formed in 1991, though all of us had met and given serious thought to an Amiga venture previously. Of interesting note is that Tom Krehbiel, our main programmer, authored and released several programs for the Commodore 64 and 128 and Amiga before that, among them the Amiga screen viewer *ViewTek*, which was a FreeWare product released on the Nets and elsewhere. *ImageFX* and *CineMorph* were our first heavy-duty professional products for the Amiga.

Successful companies are more than their PR, but are made up of interesting individuals. Who are the voices behind NOVA Design?

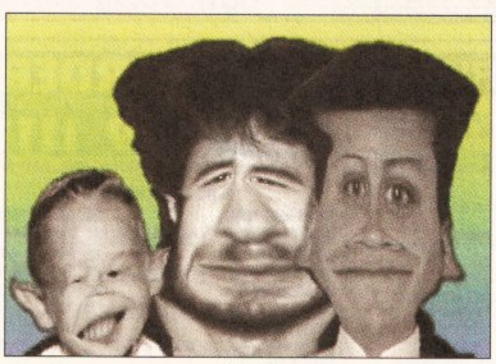
Nova Design is: Thomas Krehbiel who did 95% of the IFX programming. He also authored such other software as *Rend24*, *ViewTek*, and other public domain wares. Kermit Woodall, Research and Design, who has been involved with Commodore for a long time as an SIG leader and a programmer. Kermit's work with us is first rate. *ImageFX* is really his brainchild. He can find any information at all, and he's a modem junkie to boot as our on-line voice. As for myself, Bob Fisher, I'm the public relations person. My gift is my mouth, the gift of gab. Most of my adult career I've been in sales in one way or another. I've also been a DJ in the hip and trendy eighties. As a DJ I obviously worked a lot with the public. I knew how to make people experience new and exciting things, an attitude that has been of great benefit. I was the last person who came into NOVA Design, and would like to think that I'm instrumental in the development of our new products.



In a series of in-depth interviews, R. Shamms Mortier talks to the leading names who make the Amiga industry the exciting, everchanging place it is.

Amiga Shopper readers are always interested in finding out how a successful Amiga entrepreneur developed their skills. Can you say something about the three of you in that regard?

Thomas Krehbiel is a self taught Amiga programmer who has been at it for about ten years. His first programs were on an old Palamax hard drive, a do-it-yourself hard drive kit long since crashed out. He's written tons of Amiga ware in graphics, music, and utilities. Kermit Woodall is a former C64/C128 programmer and interface designer. He's also self taught, and did little with computing in college, centring mainly on media classes. He's also a computer consultant and engineer outside of NOVA. As for me, I have many years of sales, management, and PR experience in both retail and wholesale for local and national organisations. I am also the animator of the three of us, having started it years ago with traditional methods. Having done animation the traditional way, I have a great respect for doing computer animation. As a small fact, we all met in our local Amiga User Group; the Richmond (Virginia) Amiga Group (RAG). Bob ran the group at that time and continues to run it today. Tom and Kermit are also active members and officers in the group.



The three co-owners of NOVA Design. From left to right: Bob Fisher, Tom Krehbiel, and Kermit Woodall (all slightly altered in NOVA Design's ImageFX Cinemorph morphing/warping module).

What about your combined histories with the Amiga?

Tom has been programming on the Amiga since 1987. I've been "playing" with my Amiga since 1986. Kermit hung on to his C64 and C128 until 1988, when he traded them for an Amiga 1000.

Many Amiga developers, given the volatility of the world markets in computing accessories and software in general, have hedged their bets by porting their wares to other platforms. Realising that this is a survival move in many cases, does NOVA have any plans in that direction as far as ImageFX is concerned?

Nova Design currently does not develop for other platforms, and has absolutely no plans to port *ImageFX* beyond the Amiga boundaries. We have no secret editions of *ImageFX* for the SGI, Mac or PC platforms, nor are we even fantasising about such a move. We've had fantastic success in the Amiga market and see no reason to go elsewhere. We might develop other wares, as yet unforeseen, for other platforms in addition to the Amiga, but we will never abandon the Amiga in our efforts. Our research and design is Amiga focused, period. We're more than satisfied with competing in the Amiga market, and blowing the competition out of the water.

How about some details on the early history of ImageFX?

ImageFX started life as a scanner control package, but it quickly grew into a complete image processing package. We thought it was time for a full featured, all-in-one image processor, special effects package that was not available on the Amiga prior to the release of *ImageFX*. I personally had been doing professional work with the other competitive packages, and found them seriously lacking in many respects, so *ImageFX* was developed out of some needs that we had ourselves. There were certain criteria from which we worked: 1) It had to work on all Amigas. 2) It had to be easy to use. 3) It had to be a stand-alone package, not tied to any hardware. 4) It had to be affordable, with no hidden add-ons, such as having to buy another package because the base package didn't include your particular file format or was missing a desired special effect. 5) It had to be expandable. We felt that we achieved these goals with its initial release, and now with the latest releases we are going further than we ever dreamed possible.

Did we achieve our goals? Well, we are well on the way; more so, I think, than the others. *ImageFX* works on all Amigas with 2 to 3Mb of RAM. It is unbelievably easy to use, and its interface has not been altered in any major way in 2.0. It is definitely a stand-alone package, not tied to any other product. At $399 and an upgrade cost of $99, we feel that it is priced at an affordable level for what it does (in fact, we think it's a bargain!). The package is very full featured, with no extra goodies to be purchased as add-ons. Considering its

awesome ARexx interface and the continued addition of special effects, it continues to meet our hopes of developing an expandable product that will continue to grow as the needs arise.

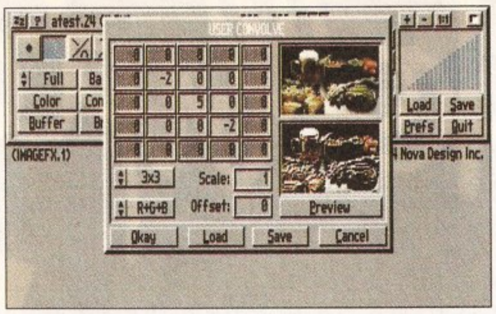
As I mentioned earlier, the interfaces of the three top Amiga image processors are radically different. What can you say about ImageFX's interface?
We feel *ImageFX* has a more consistent and easy-to-use interface than its competitors, and its features, though easy to grasp by even the novice Amiga artist or animator, were designed specifically for professionals. The difference between *good* software and *great* software is the interface. *ImageFX* is *great* software.

What about the loving relationship NOVA seems to enjoy with GVP? How did that come about, and is it as good as it is perceived to be?
We contacted GVP through a friend of ours, Chris Darsch, who was creating *PhonePak*. GVP were impressed and liked what we showed them and the rest, as they say, is history.

How many Amigas are used at NOVA central, and what are they used for?
Nova Design has one A4000, five A2000s and one A1200. All machines are running GVP accelerators and have a wide range of Amiga display cards on them as well. The A4000 is used mainly as the central programming system. The A2000s are used for testing the Beta software, and each is configured differently. The A1200 is also used for Beta testing, and is Kermit's main machine.

Now to ImageFX 2.0 and the 2.0 upgrade.
It's impossible to tell you everything. *ImageFX 2.0* is the most significant upgrade in not only *ImageFX's* history, but far exceeds the upgrades of competing packages. 2.0 will be adding *many* new special effects with realtime previews, drawing capabilities, and a version that runs totally on the EGS... a total EGS environment. There are more file converters, FrameStore, BMP, and other PC stuff. Toaster users are going to love us – there are so many additional Toaster related things. Desktop publishing fanatics are treated to new Epson scanner controls, PostScript related screens, and what we consider to be the best 24-bit printing output around. There are about two dozen new video animation effects. Any picture saved in any format will have an associated "thumbnail", a small visual that is stored in the file with the actual picture. This will make it easier to identify pictures and frames for later processing and manipulation. There's also "IMP", our batch processing engine. This will allow for much easier animation creation. Even the ARexx scripting is upgraded with our enhanced micro-recording feature. This lets you work as normal, while the system watches and actually writes an ARexx script based upon your interactions. Later, this script can be used to automate a similar desired result. More than an upgrade, it's like getting a whole new program. Obviously, the more RAM you have, the better. But *ImageFX* is the kindest to the disadvantaged user who is currently not able to purchase extra RAM, and that attitude continues in the 2.0 upgrade. Basic stuff can be done with 3Mb of RAM, though the software likes a *minimum* of 3Mb better.

How about Cinemorph? Where's that heading?
We still believe that *Cinemorph* is the easiest morphing program to learn and use on the Amiga.



The new Convolve operator in ImageFX 2.0 shows a new enhanced visual approach that gives a preview of where various settings will take you.

(60,000 users worldwide can't be wrong!) The enhancements for the 2.0 release are subtle and in some cases cosmetic, such as the new colour display. *Cinemorph* was never supposed to be released as a stand-alone package, which happened at the beginning. It was always supposed to be a part of the *ImageFX* environment. As for where it's going, it's pretty much at its peak. Probably all we'll add in the near future is the ability to preview all frames in full colour.

ImageFX has excellent drawing capabilities for touching up imported frames. Have they been effected in the 2.0 release?
ImageFX 2.0's drawing capabilities have been overhauled, allowing for much more sophisticated drawing mode modules. The ARexx commands have been expanded greatly as well, which adds more capabilities to every area, including the drawing options.

Of all of the new attributes of ImageFX 2.0, can you single out your three favourites?
The three top enhancements you'll see in *ImageFX 2.0* will be its native EGS display in resizable windows, quick effects previews via a cool thumbnail display, and many expanded drawing capabilities. Of course new render modules, scanner modules, and loaders and savers (including PICT and Toaster Framestore) will be added as well.

Do you want to say anything about the pricing strategy that NOVA employs in connection to ImageFX?
ImageFX currently lists for $399, and the upgrade price is expected to be around $99. Most times, you can get it new for about $200 from the mail order houses. Our philosophy is to provide the most powerful image processing system for the lowest possible cost to the end-user. Most of our minor upgrades are free in keeping with this policy.

How about the hardware end of things?
DSP (Digital Signal Processing) hardware would make for interesting image processing applications. Right now, the Amiga is barely better than the competition. I would like to see a more powerful chip configuration in the Amiga 5000s. Most of what we have to do now in software should be done in the hardware. I'd like to see true retargetable graphics built in. I wouldn't put the A5000 on the market if it couldn't read every other disk format on the market, and this is for sure! It should automatically be able to access every other format. *Then* they can stand on the rooftops and shout about this capability.

What can Commodore themselves do to help Amiga developers like yourselves?
Commodore can help developers by completing and releasing RTG (Retargetable graphics) and just keep selling millions of Amigas. In 1986 Amiga users were willing to give Commodore the benefit of the doubt, and I'd like to see that again. The potential for the Amiga is still there, but Commodore have to jump in with some national advertising. Commodore are missing a big opportunity by not advertising on cable. Everybody has cable, and it costs far less to advertise on it.

Amiga users always like to hear about Amiga wares invading the upend precincts of the professional animators. How is ImageFX doing in that area?
As one example there's Rusty Mills, a very entrenched Warner Brothers professional animator. He is a director of animation, and thinks that *ImageFX* is "the most important piece of graphics software this decade". Rusty is in charge of the "Animaniacs" show. They work on images about 10,000 x 10,000 pixels, which *ImageFX* can handle fine. They've got all of the platforms in the studio, and prefer the Amiga over everything else, though software limitations prevent them from doing this. He uses *ImageFX* to do the titles and credits to do each piece.

How does ImageFX compare to peer software on other platforms?
There are a few difficulties in comparing the Amiga to other platforms and this also applies to comparing *ImageFX* to other computer platforms' solutions. PCs and Macs aren't inherently good desktop video machines, which is the Amiga's domain. However, these platforms have done great things to make up for a lack of inherent video compatibility. People make favourable comparisons of *ImageFX* to *Photoshop*, but the truth is that *Photoshop* is much more orientated towards print applications and is without doubt the best thing for that. *ImageFX*, on the other hand, has far more tools for the video professional – not the least of which is its Arexx language and the application of that for processing series of frames in batches automatically.

Any concluding words for the Amiga image processing community?
We love the fact that high end applications are being done with *ImageFX*. We're very proud of that, but we are also dedicated to providing the same service to the standard Amiga user, the person who uses the machine for enjoyment. We like to think that we're giving creative potentials never before dreamt of to both ends of the spectrum, and everybody in between. Money has never been the driving force behind NOVA Design... we did this because we wanted to develop a great package that would do all of the things that we, as creative dreamers, wanted it to. Our software is a great program. And, oh yes, keep buying *ImageFX*. AS



WHO
NOVA Designs
WHAT
Image FX 2.0 – (UK price to be announced)
WHERE
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The Amiga Tapes



What can we expect from Commodore? Does the Amiga have a place in the future marketplace? Find out what the experts had to say at the Amiga Shopper conference.



***Cliff Ramshaw**, your illustrious editor, used to work as a freelance games programmer back in the days when the VIC 20 was young. His first computer was a Sinclair ZX80, bought in 1980 (he thinks)*

First Amiga:	*an A500, bought in 1988*
Current Amiga set-up:	*an A4000/040 with 4Mb of RAM and a 120Mb hard drive*
Dream Amiga peripheral:	*a PAL Video Toaster*



***Graeme Sandiford** recently joined Amiga Shopper as technical writer. He likes drinking Guiness (but can't keep up with Cliff) and using 3D drawing packages. A 16K Spectrum, bought in 1982, was his first computer.*

First Amiga:	*an A500, bought in 1990*
Current Amiga set-up:	*an A1200 with 6Mb of RAM and an 80Mb hard drive*
Dream Amiga peripheral:	*an A4 colour flatbed scanner*

On the 12th March *Amiga Shopper* convened a conference to discuss the current state of the Amiga market and what Commodore should be doing to ensure the Amiga's future. Top Amiga journalists Jeff Walker, Mark Smiddy, Toby Simpson and Paul Overaa came from across the country to join Cliff Ramshaw, *Amiga Shopper*'s editor, Graeme Sandiford, technical writer, and Marcus Dyson, editor of *Amiga Format*. Here's what was said:

Cliff: Let's discuss Commodore and the state of the Amiga. If David Pleasance were here now, what would you say to him? What should David Pleasance do to better the Amiga?

Jeff: For Christ's sake get some CD-ROM stuff out for the 1200 and the 4000 – do whatever they can to get it out. Allegedly they've ditched the 1200 one *[see page 4]*, and the A4000 one looks to be coming at the end of this year! It's too late!

Cliff: Explain why that is so critical for them.

Jeff: Because CD-ROM is happening now. Just look at magazine front covers and see what stories they're talking about – CD-ROM. It's what people want to read about; it's what people want to use... and I think the Amiga users ought to get in on CD-ROM – Amiga 1200 owners, in particular, who are the mainstay of the Amiga market. It looks to them like they're being left out. From Commodore there's always "something coming along" – there has been for the last nine months, but there's nothing here – and we want it now.

Mark: I want to see the price dropped to a realistic level. The price of the 4000 is...

Toby: The 4000 is grossly over-priced, there's absolutely no doubt about it now – it's really quite pathetic. You can buy an '040-based Apple Mac with a monitor, CD-ROM drive, 120 meg hard drive, eight meg of RAM for sub-grand – at retail, for crying out loud!

They should be selling the 4000 with say a 120 meg hard drive, 6 meg of RAM, and an '030 processor for 650 quid without a monitor, 700 quid tops. You should be able to get an '040-based Amiga 4000, including VAT, everything, with a monitor – you should be able to get it for well sub-grand – it's certainly not worth more. You can buy a 486 DX PC with you-name-whatever shoved in it, now for less than a thousand.

Jeff: One of the things that's keeping the price of the '040 ones up is that to get a decent price on '040 chips you must buy ten thousand of them and Commodore isn't going to buy ten thousand '040 chips.

Marcus: Tony Inahri (head of Power Computing) reckons he's going to have a fairly affordable '040 accelerator for the A1200 soon. If he can afford to do that, why the hell can't Commodore knock £500 of the 4000/040?

Toby: I think one of the problems is all of the little bits that have to go next to an '040 to make it work – and in the 4000 it is perhaps unnecessarily complex to retain compatibility with the 3000. The '040 board inside a 4000 can actually plug into a 3000 – it's actually compatible. Perhaps it ought not to be – perhaps it ought to be designed into the motherboard so it was all a lot cheaper.

Jeff: It will be.

Toby: Well, absolutely. Hopefully they've fixed all these things for the 4000T, which costs £1,999

including VAT.

Mark: And it's still way, way too much.

Toby: Well, it's a great machine, no doubt about it. I'd love one, but I wouldn't pay that for it – I'd pay about thirteen hundred quid for it, I think.

Marcus: Even then it wouldn't compare that well with a 486DX, monitor, CD-ROM and everything . You can pick that up for just over a grand.

Mark: People now just want speed and power – all they're interested in is how fast can it do X, Y, Z and if it can't do it fast enough, well tough bloody titty.

Toby: Well actually, what they're mainly more interested in is if it runs the software they want to use.

Mark: Yea, but again, it's the speed. It's constantly pushing back that speed barrier. Now we've got Pentiums coming out – your basic Pentium system you can get for what? Two thousand quid or less, with SVGA monitor and all this other crap; and the Amiga 4000 just doesn't look that fast.

Toby: Yea, but it's just not competing anymore. I think perhaps it's really a case of addressing what markets Commodore have left for the 4000 – as far as I can see, it's probably only three – and actually making an effort to sell it into those markets. Otherwise they might as well discontinue the product.

Cliff: And those three being?

Toby: As a box to put a Video Toaster in, that's pretty much, I think, the only market in the States; as a video and multimedia thing, because it's only just now that the other PC stuff is catching up – there's still software you can get on the Amiga which you can't do on the PC yet, properly; and as a logical upgrade path for the power home user who's already got an Amiga. They really are the only three markets for the 4000 as far as I can see, and I can't remember the last time it was properly marketed in any way for video and presentation work. Again it falls back to the fact of: where's its CD-ROM drive? Nobody's really going to take it seriously till you've got a 4000 with a CD-ROM drive.

Cliff: Why haven't Commodore done that? It does seem, as Jeff was saying, a fairly obvious step, and they haven't addressed it yet. There are rumours that limitations of the A1200's credit card slot makes it physically impossible.

Marcus: The A1200 CD was never going to be PCMCIA interfaced – it's not just limiting, it's a 16-bit bus. But the problem was that if it was going to utilise the trapdoor slot, what about all the 1200 users who've already stuck a RAM/FPU/Accelerator in there? The A4000CD will be available later this year, and we've just heard that there is going to be an A1200 one too *[see page 5 for details – Ed]*.

Jeff: I think it wasn't financially possible.

Toby: Yes, I would be inclined to agree, which means it's a downward spiral, because if you follow that through to its logical conclusion – you can't afford to develop the new kit means you're not keeping up anymore, which means less people are buying your current kit. And... glugg glugg glugg glugg, you're under.

Cliff: Perhaps to come back down to planet Earth again and the 1200. Commodore really do seem to have a great opportunity, at the moment... I get the sense that people have a strong loyalty to Commodore and the Amiga.

Toby: They do, not that Commodore deserve it.

Cliff: But David Pleasance himself made exactly that point last week. He said that somehow, despite all the things that have happened at Commodore, and despite the financial problems that they've got, despite the money that they haven't got to advertise, people have still got a great sense of loyalty to Commodore. Amiga Format, for example, has just had a two hundred thousand-selling issue – now where are these people coming from?

Jeff: They're coming from the Amiga 600, which they were selling for £99 at Christmas. That's a whole new generation of computer users – not Amiga users – people who've never owned computers before. They've always wanted a computer, but they've looked at it and thought: "I'm not paying that – I don't really understand it," but at £99, they'll give it a go. So you've got an awful lot of new computer users with an Amiga 600, one floppy drive, one megabyte of RAM. Maybe they got the extra megabyte when they bought it, but they didn't buy a floppy drive.

Toby: And these are people now that have Amigas. The trick – and this is the hard thing which I've felt in the past – is how to keep them having Amigas. When they decide they like the computer, you want to stop them from buying a PC, you want them to buy a 1200, and then to buy a 4000, something like that.

Marcus: *Amiga Format's* reader survey shows that our readership are becoming better equipped



Jeff Walker, acknowledged desktop publishing expert is consultant editor for Amiga Shopper, and editor of the fanzine JAM. The computer he first laid his hands on was a Sinclair QL, bought in 1986

First Amiga:	***An A500, bought in 1988***
Current Amiga set-up:	***An A4000/040 with 26Mb of RAM, three hard disks totalling almost 1Gb of storage, and a 17" multiscan monitor, all used to produce JAM***
Dream Amiga peripheral:	***An oversize A3 thousand dots per inch laser printer***



Mark Smiddy, Amiga Shopper's other consultant editor, is a leading authority on business software and the intricacies of AmigaDOS. He first ventured out in the computing world with a Dragon 32, bought in 1982

First Amiga:	***An A500, bought in 1988***
Current Amiga set-up:	***an A3000 with 4Mb of RAM, a 110Mb hard drive, a KCS dual high-density floppy drive, and an Epson GP 6500 flatbed colour scanner.***
Dream Amiga peripheral:	***a 14,400 baud modem***

"The Amiga has an absolutely beautiful operating system – it is just the world's best kept secret."





"The Amiga may have a really whizzy operating system, but if it doesn't have the software that runs under it, then it's completely wasted. Perhaps Commodore could consider spending some money getting some decent killer applications. For example, there's absolutely no word processor on the Amiga that can be compared to Word – not even close."



Toby Simpson, is the lead programmer with Millennium Interactive and one of Amiga Shopper's trusted writers. He specialises in C-programming. The first computer he owned was an Oric 1 48K, bought in 1983.

First Amiga: ***An A500 bought in November 1988 – one of the first with Kickstart 1.3***

Current Amiga set-up: ***an A3000T with 176Mb hard drive, 10Mb RAM, multiscan monitor, and a Commodore Ethernet card networked to an A4000/030 with a SCSI-2 card, 120Mb hard drive, 6Mb RAM and another multiscan monitor***

Dream Amiga peripheral: ***Commodore***

rather than less well equipped. You can't argue that A600 users are going to run off to the PC. It's your A1200 user with a RAM expansion, FPU, bubble jet printer and hard drive that sees the PC or Mac as the next logical step, because for him the A3000 is big and expense with no jump in performance, and the A4000 is just too damn expensive to even consider. We can keep the new adopters happy for a few years, but we need something to keep the upgraders happy.

Cliff: If you've got used to running certain products – Wordworth or a paint package on the Amiga – then you'll want to stay with that platform, won't you?

Toby: Well, no, because you'll take one look at Microsoft *Word* and you'll think: "Jesus!"

Cliff: But why do you say Microsoft Word?

Toby: Because at work, at school, or wherever it is that you go where people are... PCs are multiplying like rabbits.

Mark: *Word* is synonymous with word processing. If you see a word processor, ninety-nine times out of a hundred, it'll be *Word*, unless it's a PCW.

Toby: *Word* or *Word Perfect* if it's on a PC, and if it isn't on a PC it'll be on a Mac. It certainly won't be on an Amiga. I'm probably getting a home machine later on this year, and it's almost certainly now going to be a PC. I don't like PCs – I hate the operating system, I hate the operating environment – but they do run the software that I'm going to want to use. The Amiga, simply, doesn't.

Paul: There's certainly a hard core of people that are interested in programming the Amiga, that actually think it's a really good machine to program. PCs are rubbish to program. The 68K chip is good for programming.

Toby: It *is* a good machine to program.

Graeme: Commodore aren't really supporting it, are they? They make it difficult actually for you to do that.

Toby: I develop on the Amiga, and I develop because I love the operating environment; the Amiga has an absolutely beautiful operating system – it is just one of the best. If I use Windows, I just hate it – it drives me up the wall. If I use DOS, it drives me up the wall; the Apple Macintosh – it drives me up the wall because it's like it pampers you through everything, and you can't do anything advanced – you can't open up a Shell and take a directory, it doesn't multi-task properly...

Yea – the Amiga is just so wonderful. With it I can back up my hard disk at the same time as calling CIX – I frequently do this at the same time as doing other maintenance work on my hard drive and I can be programming, and it's going to be perfectly stable and it's not going to crash. It's just perfectly reliable and it's brilliant.

Mark: Since Workbench 2 that's something which is very true – the multi-tasking really does work, and it works bloody well. It works so well you don't even know you're doing it.

Toby: It's state-of-the-art-operating system technology. The Amiga is one of the world's best kept secrets – it's as simple as that.

Jeff: The only people who use operating systems are programmers, the rest of us use programs...

Toby: But you see, what makes an operating system something that people use so that they don't really realise they're using it, is the software that runs under it... and the Amiga may have a really whizzy operating system, but if it doesn't have any decent applications to use under it, then it's all completely wasted. Perhaps Commodore could consider spending some money getting some decent "killer applications".

Cliff: Killer applications like what? Commodore aren't a software publisher.

Toby: No, but I think it's in their best interests to push people in the right direction, maybe with financing, maybe with proper assistance and developer support, to get some of these applications. For a start it really does need a proper word processor. By proper I mean you have to be able to put it next to *Word* and...

Mark: It's got to be word processing. The classic example is the Amstrad PCW. Amstrad sold a very crappy Z80-based machine, based entirely on the word processing thing.

Mark: They sold a computer that was based on a word processor, because it had a word processor with it – and Commodore could do exactly the same thing with the Amiga.

Toby: There is absolutely no word processor on the Amiga at the moment that stacks up next to *Word* without looking really silly – absolutely nothing – not even close really. You can do things with a document in *Word* that you can just *dream* of doing on the Amiga – you can't *do* it.

Cliff: But the Amiga is capable of this, surely?

Toby: Oh God yes! The Amiga could do it better. That's the thing – it's got such a beautiful operating system that these programs could be

really cool.

Marcus: The machine's capable of it, sure. But is the market capable of supporting it? Are there enough Amiga users prepared to pay £150 for a word processor that has had that much development put into it?

Mark: Mind you, what it does lack is a stable graphics screen mode. It's not running something like Productivity mode, because it's not being sold with a decent monitor. Most home users will only have at best a 1084S monitor.

Toby: This is where the AGA chipset is a bit of a crock, really, because with the 3000 you could plug a cheap hundred quid colour VGA monitor into the back – everything was flicker-fixed, no matter what mode you threw it in. It was all great and all perfectly stable, and the best thing was that it was the cheap monitor you needed. On the 4000, if you want to use the flicker-fixed modes you have to buy a multi-sync. It's not a case of "you could buy a VGA" – you can't, you have to have a multi-sync because the bloody machine insists on having these low scan rate screen modes...

Jeff: Same with the 1200.

Toby: ...and it is mind-blowingly irritating, because these days a whole load of multi-sync manufacturers don't bother with the low syncs because they're old hat. So you have to start spending a lot of money to get a monitor that's really good for the 4000. Of course the 4000 really could have benefited from a built-in, motherboard-based flicker-fixing device, so you didn't have to worry about all this double-PAL bollocks, and you could actually just select 640 by 512, 1280 by 512, 800 by whatever, and you'd get it – and it'd be flicker fixed, and it would go straight out on to an off-the-shelf SVGA monitor which is going to cost you absolutely nothing, and you might actually encourage some people to buy it.

Mark: See, the point is that PCs made their money, if you like, working on text, on text monitors, with word processors like your original *Word* for DOS and *Word Perfect*; then they all went to graphics-based monitors, with graphics text, but you couldn't tell the difference because the resolution was so much higher. Amiga word processors always use graphics text, but because of the low resolution monitor, which means a low resolution design, you always get these cramped looking characters. People who look at the Amiga screen, and then at Microsoft *Word* running on a Mac or on Windows, say: "But it's crap!"

Toby: Have you ever used an Amiga with a Picasso board in it? Without making it sound like a blatant advert for Picasso, because there are certainly other ones available, a friend of mine in London got one for just £299 from Blittersoft. It's really cool – he's got it plugged into his 4000 '040 and suddenly his Amiga is transformed – 800 by 600 screens for Workbench and applications, and suddenly it just looks so good. The fonts – everything just looks wonderful. It's got big, usable workspaces, and it's a joy to use. You sit there and you think: "Wow! Why hasn't it got this built in?" AGA is old hat – it was pretty much old hat when it came out, actually – it came out basically when VGA was old hat – everybody had SVGA modes and 256-colour big, swanky displays on PCs really cheaply. And it's just... it's amazing the difference the Picasso board can make.

Marcus: Yeah, I really want one of those. But it is something the Amiga should have built in. Just look at WYSIWYG word processing on the Amiga, even with a dual sync monitor you have to have the text at 16 point for it to look half-way decent.

Jeff: There is a negative side to that point – I've got Retina, and I use 1084 by 768 modes, and it's limited by the graphics memory. With multi-tasking, if you keep on opening screens, pretty soon you run out of graphics memory.

Toby: Well you've got two meg of chip. But yea, if I was re-designing the Amiga chipset that would be one of the things I'd change.

Jeff: With the next chipset we're looking at sixteen megabytes of chip.

Toby: Well, whatever the next chipset be. One wonders whether under the circumstances may be it might be a good idea to use a cheap, off-the-shelf SVGA chipset in the higher machines, to give you a decent operating mode.

Mark: There's no reason why they couldn't run one alongside the other; you could have both of them. You could have the one over the top of the other, coming out of the same video port, or even out of a different video port if that was more convenient for Commodore, but at least actually have an accessible mode which mirrored the resolutions on modern PCs. *And* give programs access to a screen resolution that they're comfortable with.

Jeff: I think we've got a massive gap between where the market is – the software and the hardware – and where the users are, the Amiga 1200 users. There's an enormous great chasm between what they'd love to be able to use, but simply cannot afford – you're talking about equipment that costs a thousand pound or more – and what they've actually got. You know, they can plug it all in, but there's no way they can afford it when it costs five times as much as the machine.

Cliff: Just one final question: do you think Commodore will still be around in two years time?

Mark: I do.

Cliff: You think they'll survive their current troubles and make it through?

Mark: Yea, I think so because on the up-side there's a core of people out there that still, for some unknown unbelievable reason, believe in Commodore. I mean, I do actually, I still like Commodore. Commodore are nice guys. They've been silly, they make a lot of cock-ups, but basically they're not bad blokes. On the other hand Atari are a right... well, I'm not going to say it on the record.

Toby: Yea, well, just because you accept that Commodore's better than Atari that doesn't really get you anything, because there's this huge gap between Commodore and anybody else.

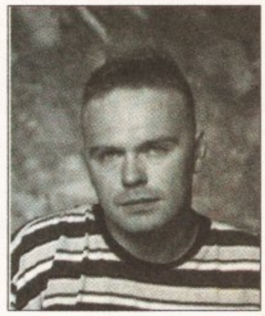
Cliff: Go on, answer the question. Do you think they'll still be here in two years time making Amigas?

Paul Overaa, is an accomplished Amiga programmer who favours a structured approach to his craft, and the author of many books on the subject. He first bought an Apple II in 1981, before discovering the Amiga.



First Amiga:	***an A1000, bought in 1986***
Current Amiga set-up:	***an A4000/040 with 6Mb RAM and a 200Mb hard drive PLUS an A2000 and an A500***
Dream Amiga peripheral:	***an A4 colour flatbed scanner***

Marcus Dyson, until recently, was editor of Amiga Format. Before that he worked as its art editor. His knowledge of the Amiga is only topped by his love for it. The VIC-20, bought in 1982, was his first machine.



First Amiga:	***A500, bought in 1988***
Current Amiga set-up:	***A4000/040 with 16Mb of RAM and 250Mb hard disk***
Dream Amiga peripheral:	***Retina 3 video card***

Toby: I have my doubts. They won't be here in two year's time without significant, continued change – 'cause they are making changes, and that's a positive thing – not without continued significant changes and also properly addressing the markets that they have and making the most out of them. They have such an opportunity with the 1200. I read somewhere that Commodore have 85 per cent of the home computer market, and there was some PC manufacturer quoted as saying, "Unless we can take the 1200 on, we don't stand a chance." The 1200 has just got it all. The Amiga just sits there – a huge market.

Cliff: Jeff?

Jeff: I think CD32 will keep them going money-wise – I think they'll make enough money from that to keep them going for two years – we'll find out next Christmas, really.

Marcus: We'd all like to see them here, but I don't think any of us would actually put money on it *[see page 5 of this issue for the very latest update on Commodore's fortunes, as well as a break-down of their recent financial performance – Ed]*. The products are right, but the marketing, and particularly the merchandising is poor. I'm sure it would be possible to run a highly profitable company on the back of the A1200, A4000 and CD32, particularly with the new CD1200. I'm just not sure that Commodore are the company to do it.

Cliff: Thank you everyone. AS

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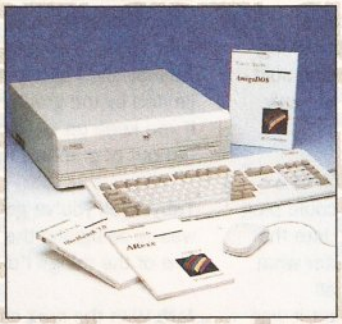
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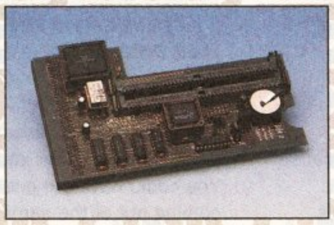
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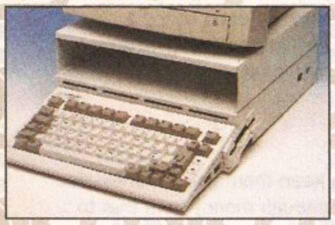
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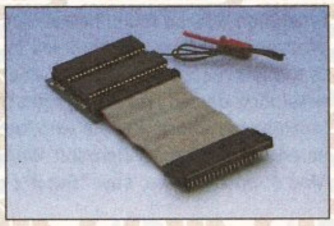
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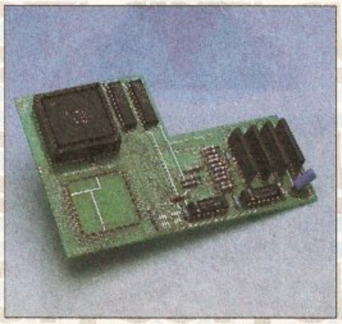
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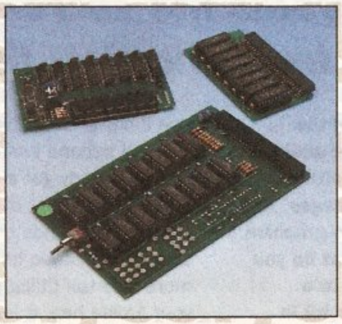
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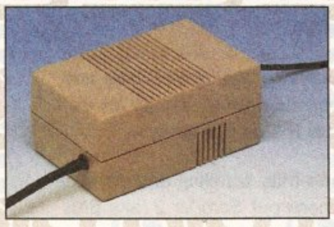
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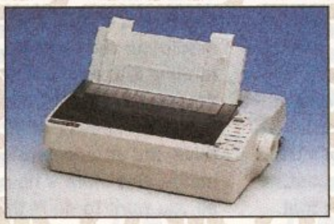
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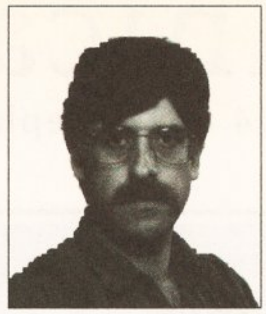
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Video Titling

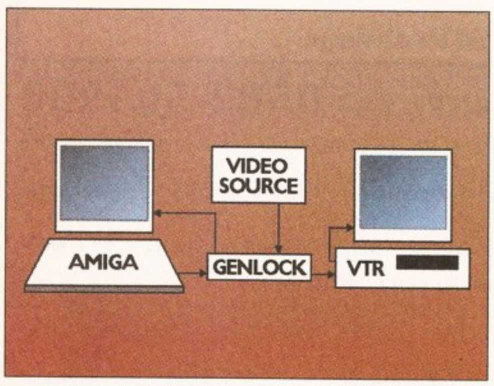


Gary Whiteley reveals the secrets of the professionals in a two-part series teaching you the basics of video titling.

One of the most common uses of the Amiga in video production is for adding graphics and text to a video – either alone or superimposed over the video images. And one of the most prevalent uses for these graphics is for titles or credit sequences. But what do you need to add your own titles and credits to a production – and how do you actually do it? In this first installment of a two part tutorial Gary Whiteley explains what equipment you need to get going and introduces you to some of the basics of video titling.

THE HARD KIT

As you are doubtlessly aware, there are quite a few different models of Amiga available at the moment. Most are no longer on sale, though this doesn't necessarily mean that they'll be of no use for video production – after all they worked fine in the past, so why stop using them now? The problem is that not all Amigas are created equal, so what you need to get the job done depends to a large extent on the configuration of your Amiga. Some Amigas (such as the A1200) can output good quality composite video signals directly, which can save on costs if you just want to add titles directly to your video as you edit and don't want to superimpose them. Other models (for instance the A500 and A4000) don't supply video outputs, just RGB which can't be recorded directly to tape, or mixed with video directly. If you have an RGB-only Amiga then you'll need some way of converting its standard RGB output into a video signal suitable for your needs. The solution in most cases is to use a genlock. Not only will a genlock convert RGB to video, allowing it to be recorded to tape, it will also enable you to mix Amiga graphics directly over video, and often provide some form of video effects too, most likely these will be fader controls. Genlocks vary widely in price and features, but be warned – the most expensive ones don't always provide the best quality! However, this isn't an article about genlocks and which is the best buy, so I'll move on pretty sharpishly.



This is one of the most basic genlock setups – and probably the most commonly used one. With a genlock Amiga graphics can be superimposed over video images before being recorded to the final edit master.

The second essential (I'm assuming that you've already got an Amiga!) is to have an adequate amount of memory. Again, exactly what you need depends on what you wish to do. For the simplest of static titles, or use with one of the more Spartan titling packages, I'd recommend that your Amiga has at least 1Mb of RAM. Obviously more complicated applications need more memory and if you were to use one of the more sophisticated packages, then you may well need 4Mb, or more, RAM. Finding out if you need more memory is easy – if you can't get the screen size or resolution you require, or you are continually running into memory shortages, then it's obviously time to think about adding more RAM. For the ultimate in power there's no denying that a hard drive and an accelerated Amiga come in very handy. But there's no need to go to such lengths if all you want to do is the occasional bit of home video titling, for which even a 1Mb Amiga 500 would probably satisfy your needs. For all-singing, all-dancing productions an Amiga 4000 or equivalent, such as an Amiga 2000 or 3000 fitted with 8Mb of RAM (including 2Mb chip RAM), a suitable graphics card and a big hard disk will almost certainly fulfil the vast majority of your requirements. So, you've got your Amiga and genlock, now how about some video equipment? Yes, that's right, you still need *more* equipment. The most basic titling setup requires at least one video deck (VCR) to record on to, two if you want to genlock graphics over video. The source VCR could be either a camcorder or a normal VCR, but the record VCR will almost certainly have to be a standard deck, though it could be any suitable video format – for instance VHS, SVHS, Video8, U-matic, or even Betacam if that's your inclination. A typical genlock setup is illustrated below.

THE SOFT KIT

Next comes the software. Although anything the Amiga can show on screen can be output to video you'll quickly realise that there's not a great range of uses for either Workbench or Notepad in video titling situations, so you'll need to get hold of some software which can produce suitable graphics and text for your needs. Most folks start out with paint and animation programs, such as *Deluxe Paint IV*, as these provide many of the tools necessary to produce a wide range of graphics and animations. In fact, for overall flexibility *Deluxe Paint IV* is *exactly* what I'd recommend if you are only ever going to buy *one* program for video work. However, I'd also recommend that you save up some cash and at least buy a dedicated titling program as well, because there are some staple titling functions, such as scrolls and crawls, which are very hard, if not downright impossible, to reproduce successfully with *Deluxe Paint*. There are quite a few different titling and presentation packages, all of which vary enormously in both their features and costs – as well as the demands they place upon the host Amiga. For few-frills scrolling and crawling I'd recommend you check out *Scroller 2* (aka BAS 2), especially if your Amiga is fairly basic.



Scala MM300 is one of the best multimedia and titling programs on any computer. Lucky for us (and Commodore) that it's on the Amiga.

For much more titling variety, including wipes and many other transitions, the *SCALA* range of programs provides both good value and state of the art functions. Top of the range *Scala MM300* is perhaps the best multimedia program to be found on *any* computer platform, and it's also pretty handy for video titling. But both *Scala HVT* (Home Video Titler) or *Scala Classic* (which requires 3Mb of RAM and a hard drive) will go a long way to satisfying your titling needs, unless you're a die-hard video professional.

Broadcast Titler 2 is another dedicated titling program which, although getting a little long in the tooth, can still pitch in with the best of them when it comes to layout functions and smooth scrolling and crawling. It does tend to be quite costly though, and it needs a reasonably powerful Amiga (at least 2Mb RAM) to get the best from it. Some people will recommend *TV*Text Professional* and *ProVideoPlus*, but to my mind these programs have now outlived their usefulness (particularly *PVP*) and, unless you get them in a car-boot sale or handed down with your Amiga, I'd not go out of my way to get hold of them. 3D programs can also be pressed into service for video titling duties but producing anything other than 3D stills requires more than average Amiga power. Generating and playing back 3D animations, for instance, is best done with a powerful RAM, accelerator, and HD-equipped machine. There are also a number of public domain programs (most of which are low-cost shareware or licenceware), but, unless you're really broke, I'd recommend that you pass them up. None of them are particularly exciting, though if you really are desperate, then the best of the bunch is probably *VideoLab*.

RED LETTERS

If you're concerned with adding text to your productions, then one of the most important resources you can have is a wide selection of fonts (typefaces). Most good titling programs come with

JARGON BUSTING

Colorfont – A special type of Amiga bitmap font which uses more than one colour in its design.

Composite video – A combined video signal suitable for use with a vision mixer or recording to video tape.

Crawling – A single continuous line of text that moves sideways across the screen.

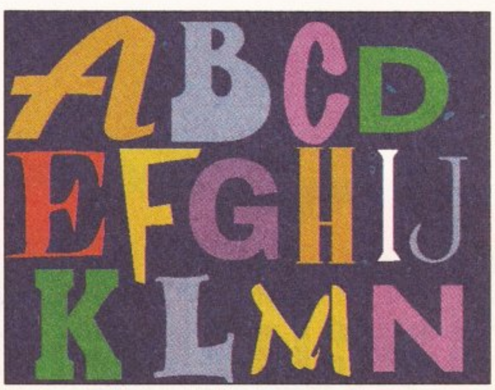
Genlock – Hardware used to provide synchronisation to video so that Amiga graphics can be superimposed over video images.

RGB – The Amiga's native video format, consisting of three electronic signals representing the red, green and blue parts of a video display as well as synchronising pulses. Not widely used in video systems because of technical difficulties, hence it must be converted to a more acceptable video format (such as composite or YC) before recording or manipulation can take place.

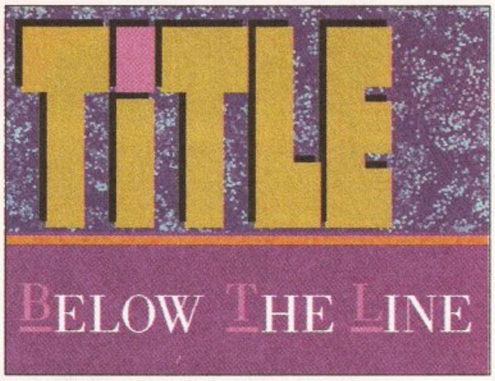
Scrolling – Continuous pages of text that move vertically up (or occasionally down) the screen.

YC video – Superior video signal which provides better image quality by keeping the brightness and colour parts of the video image separate.

a variety of useful fonts, but there are still never enough to cover every eventuality. If your Amiga has at least AmigaDOS 2.04, then you're in a great position to make use of Compugraphic fonts, many of which are available from PD libraries, or as purely commercial offerings. The great advantage of Compugraphic fonts is that they can be scaled as required, unlike the standard Amiga bitmap fonts which exist only in the sizes there were originally made at. Because Compugraphic fonts can be scaled on the fly like this, it is much easier to tailor them to your needs than to try and scale bitmap fonts (which will inevitably suffer the consequences of being magnified or shrunk). If you have a font conversion program such as *Typesmith* or *Font Manager* (both of which are commercial programs, the latter being supplied as part of Gold Disk's *Professional Page 4*), then you'll be able to convert PostScript fonts (of which there are hundreds available) for use with your titling package. And if you want great looking bitmap fonts that don't suffer from the jaggies, then you'll need either Zen's *AntiA* (for use with Compugraphic or standard Amiga fonts – reviewed in issue 8 of *Amiga Shopper*), or *A2A* (for converting Postscript fonts – reviewed in issue 37). Both programs produce high quality antialiased Colorfonts which look excellent on screen, especially in hi-res interlace. One last point on fonts – they take up loads of disk space. If you've only got floppy disks on your Amiga, then why not make up several disks containing your favourite fonts? Then, when you use a paint program, you'll know exactly where each font lives, and be able to get at it fairly quickly. Hard drive users would be well advised to set aside at least 10Mb of disk space for their font files. If you're interested, my Amiga's hard drives contain in excess of 12Mb of font data (including Compugraphic, Postscript, and Colorfonts in addition to my standard Amiga bitmap fonts), yet I often have to find new fonts for specific jobs.



A good collection of typefaces will lend variety and interest to your video titling. Get hold of as wide a selection as possible to cover all eventualities.



Making a title or graphic can be as simple as loading up your paint program and running up something like this.

TITLING BASICS

In next month's issue we'll get on to the nitty-gritty of video titling itself, but first there are a few important hints, tips and even rules that you would do well to be aware of. Naturally, rules are made to be broken and life would be incredibly dull if we all persistently conformed, so feel free to do your own thing. But take note anyway, and remember that video producers have learnt much of their craft the hard way (usually by trial and error), so it's often worth listening when knowledge is being doled out.

1) The first tip is not to use overly bright colours – particularly bright reds and blues, but also others like greens and oranges. Why? Because such colours don't transfer well to video, especially when the video format is one of the poorer quality composite video ones, such as VHS or U-matic. This point *is* important, and you'll soon realise why if you try recording brightly coloured graphics to VHS tape. See that smearing on the edge of your graphics? That's what happens with bright colours on lower end systems. Imagine what would happen when you duplicate the tape (as would be the case if you needed a number of copies). If the edited copy looks rough then, yes you guessed it, the copies will look pretty awful too. So, unless you have a top class genlock and top-quality video equipment, ease off on the bright hues. Try using colour values of 13 instead of 15 if you're using *Deluxe Paint*. Adjust other programs accordingly.

2) Use the highest resolution available to you. This is a general rule. Graphics look crisper at higher resolutions, though pre-AGA Amigas will only be able to use a maximum of sixteen colours at the highest resolution. However, you'd be surprised at just how much you can do with 16 carefully chosen colours if you apply a little thought.

3) Use reasonably sized text and graphics. If you can't read it on screen, then there's little point in it being there. A good test is to display the Amiga's video output on a TV or monitor and view it from around 8 to 12 feet away. If you can read everything clearly, then fine. If not, you'd better redesign.

4) Use overscan when you are scrolling or crawling text, or you have graphic elements which move on and off the screen. Overscan will make the Amiga's image reach past the visible edges of the TV screen so you won't see the joins. Amigas with lesser amounts of memory may be restricted to less colours when hi-res interlace is used in overscan.

5) When designing graphics for genlocking remember that one of your palette colours (usually Colour 0 – the first in the palette) is transparent on screen. Bear this in mind if you don't wish unwanted holes to appear in your Amiga images.

Gary Whiteley can be e-mailed as drgaz@cix.compulink.co.uk AS

WHERE TO GET YOUR SOFTWARE

Deluxe Paint IV – £90
Electonic Arts ☎ 0753 549442
(Reviewed in issue 10 – five star rating).

Scroller 2 – £80
Alternative Image ☎ 0533 440041

Scala MM300 – £329
(Scala MM200 owners can upgrade for £200)
Scala UK Ltd ☎ 0920 444294
(Reviewed in issue 36 – five star rating).

Scala Classic (remake of Scala 500)
Silica ☎ 081 309 1111

Broadcast Titler 2 – £199.95
Meridian ☎ 081 543 3500

Typesmith – £135
Meridian ☎ 081 543 3500
(Reviewed in issue 36 – five stars)

Professional Page 4 – £199.95
Silica ☎ 081 309 1111
(Reviewed in issue 8 – four star rating)

AntiA – £40
Zen ☎ 061 793 1931
(Reviewed in issue 8 – four stars)

A2A – £50
Alternative Image ☎ 0533 44 00 41
(Reviewed in issue 37 – five star rating)

MORE VIDEO FOR TRUE ENTHUSIASTS

If you are a keen video enthusiast who wants to explore the power of your Amiga, then you'd be mad to miss out on Gary Whiteley's comprehensive book *Amiga Desktop Video.*

***Amiga Desktop Video* – £19.95**
by Gary Whiteley
From Future Publishing ☎ 0225 822 511

Know what I mean?

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"...this way the price of the machines need not go up, but instead they could be much better aimed for the markets in which Commodore are so strong."
Toby Simpson

Well, we've all heard the bad news. AAA has apparently been shelved, if rumours are to be believed (which is doubtful, as it depends entirely on who you ask). For those of you who live on the moon, or don't have the benefit of *Amiga Shopper* every month to keep you suitably informed, AAA is the name of the super whizzy new chipset that Commodore have been telling us about for the past year or so. It promised to be the best thing since sliced bread, but now it could never happen.

Well, this does sound like bad news doesn't it? But if it *is* true (and as I said, this is by no means confirmed), is it really the end of the universe as we know it? Well, if the specification for AAA is to be believed, then it's a pretty powerful beast. The sort of thing you might expect to see on an expensive workstation, for example. This is incompatible with Commodore's current direction. "And what is that?", you might ask.

Let's look at the markets in which Commodore have power in this country: the home computer market – the A1200 is selling very well; the CD games console – since the CD32 is the only choice of CD games platform that has any good software, and it is competitively priced against CDI and PC CD-ROM systems, which are the only real competition at the moment and considerably more expensive than CD32; and finally, the multimedia and video market. This is pretty much the only professional market CBM has ever held on to, and although the gap between PC systems and Amiga systems is shrinking in the PC's favour, the Amiga is still on top with Presentation software like *Scala MM300*, and video processing utilities and, of course, the Amiga is the box which Video Toasters plug in to.

With these markets in mind, and with something so powerful and complex as AAA, maybe it is overkill, and perhaps too expensive anyway? Would AAA suit a CD32, or would a chip set which was designed from scratch to be video effects orientated be a better fit? For the Amiga home user, the category which most of you fit into, AAA seems like even more overkill. After all, who amongst you can afford the grands worth of multi-sync monitor necessary to use some of the amazing resolutions? Not many, I'll wager.

Maybe what is needed is a much more market-directed chipset, something which fixes some of the problems, brings us up to something close to SVGA standards of resolutions without flicker (for the multisync owners), adds some clever video effects for texture mapping, and improves the disk drive handling and sound features, without going too overboard on the higher end features which most people will never use (and if they want to, they can go out and buy a Picasso card, or something similar to that). After all, it makes sense to save money by not including hardware abilities which 99 per cent of buyers will never get the opportunity to see. This way the price of machines need not go up, but they could be better aimed for the markets in which Commodore are so very strong, and help to reinforce the future of the Amiga for us all.

In and amongst the gloom mongering which is happening at the moment, it's worth listening to the enthusiasm towards the Amiga which is coming from Commodore UK. They seem to understand what the Amiga is good at, and are trying to push that way. The new Amiga Centres of Excellence are a step in the right direction. Maybe a few years later than we would have preferred, but certainly better late than never. It appears it's definitely too early to order the coffins, which is great news for us all. ***Toby Simpson***

Independent or Bust

Commodore UK does something in excess of 60 per cent of its business with the major high-street retailers. What chances to survive do the "Indies" stand in a fiercely competitive market.

In many societies the weak die, and the strong survive. Yet still in Britain the urge to support the repressed courses through our veins. It is with this in mind that I wonder what on earth Commodore are playing at with their continued support of the box-shifting high street chains. I don't need to name names; many of you probably obtained your machines through one of those outlets.

People like you and me buy hardware from the multiples for a good reason: commerce. Why bother going to "Joe Bloggs Computer Emporium" and spend £329 on a machine when you can get the same thing cheaper from a multiple of shops. Even if the price is the same, the big stores often offer instant credit, or zero per cent finance. Besides, few would deny there's some comfort in just being a faceless customer meandering through the rows of row-upon-row of TVs, VCRs and HI-FIs. There they are, lined up like little statues, waiting to be played with. Glittering demos gracing the screens; cute keyboards inviting a keen finger; mice at the ready; and an orally enhanced, management-trainee-cum-tea boy never far away.

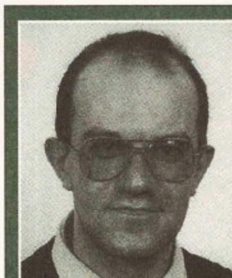
Now, "Bloggs Computer Emporium" has a different approach. They're tucked away down a little alley somewhere – off the beaten track where the rents are lower and the risk of getting mugged is a statistical fraction higher. You stroll in (hoping no one spotted you) and there, huddled up like tin soldiers, are salesmen hiding behind a counter, guarding the few computers the boss can afford to put on display like their lives depended on it. There's something forbidding about your average "Indy" as they like to be affectionately called.

Computer stores, and by that I mean proper computer stores, not sheep-like "computer game specialists", have limited appeal to Mr. Average. The image they portray still belongs in the early 80s, where only anorak-wearing, spotty oiks that couldn't make friends with a slide rule (let alone a girl) used to hang out. Proprietors: when was the last time you groomed your image and when was the last time you saw a customer enter "10 PRINT "Hello world": GOTO 10"?

It's no good bleating on "Dixons get better margins, but we give a better service". The fact is, no one cares any more because 90s Britain is financially destitute whichever way you cut it. The spotty oiks of yesteryear have discovered anti-zit lotion, grown up, discovered the opposite sex and got families of their own. Those halcyon days have gone and we can't keep on living in them and hope to survive. We have to get more business-minded if the Amiga is going to carry on.

No Indy can hope to beat Dixons on price, but they can do a lot to improve the machine's image. Get them lined up next to comparatively priced systems on other platforms and show today's user what the machine can do. Get some leading-edge software on those displays and blow their minds. Show people how pre-emptive multi-tasking can help them work faster.

Readers of this hallowed tome are infinitely more sophisticated (and more technologically literate) than those of ten years ago. It is as much your job to educate and support them, as it is ours. Commodore have long forgotten who sold machines when they cost over £2500 with a dual disk drives, monochrome monitors, 32K RAM and a cute name. I doubt the American parent even cares. Lest we forget, dear reader, if the high-street names pull the plug, the Indies will still be there. It is our job to reciprocate and support them too. ***Mark Smiddy***



"Your average Indy can be found tucked away down a little alley somewhere – off the beaten track where the rents are lower and the risk of getting mugged higher."
Mark Smiddy

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Find your local group

Your at-a-glance guide to every Amiga user group in the world.

SOUTHEAST AND EAST

Addlestone 1–1 Amiga Club. Contact Peter Duckett ☎ 0932 855834 after 8pm.

Ashford Kent Youth Computer Group. Contact Jim Fanning ☎ 0233 629804.

Banstead Limited Edition Software. Contact Les, 28 Congcroft Avenue, Banstead, Surrey SM7 3AE.

Brentwood Hermit Computer Club. Contact John Maynard ☎ 0277 218897.

Brighton Hanover Computer Club. Contact Colin Jones ☎ 0273 602834.

Camberley Camberley User Group. Contact F Wellbelove ☎ 0252 871545.

Cambridge Cambridge Sixty-Eight Group (CASE). Contact EPL Rowell ☎ 0954 210692.

Chesham Beaconsfield and District CC. Contact Philip Lishman ☎ 0494 782 298.

Clacton Cheapo PD Club. Contact Jason Meachen, Ivy Cottage, Chapel Road, Beaumont, Clacton, Essex CO16 0AR.

Coulsdon The Crumblies. Contact Frank Barron ☎ 081 668 7695

Coventry Cov and Warb Commodore Computer Club. Contact Will Light ☎ 0203 413 511.

Enfield Enfield Amiga Club. Contact Sean Clifton ☎ 081 8042867

Folkestone Amiga Mania. Contact D Cryer, 88 Blackbull Rd, Folkestone, Kent CT19 5QX.

Gerrards Cross Chic Computer Club. Contact Steve Winter ☎ 0753 884473.

Hastings Computer Club. Contact ☎ 0424 421480.

Horsham Amiga Zone. Contact Gareth and Raymond, 7 Swindon Road, Horsham, W. Sussex RH12 2HE.

Ipswich Not the Night. Contact Andrew, 8 Lanark Road, Ipswich, Suffolk IP4 3EH.

Leigh-on-Sea Sensible. Contact M Street, 158 Hadleigh Road, Leigh-on-Sea, Essex SS9 2LP.

Leigh-on-Sea The Swop Shop Club. Contact Ian Prentice ☎ 0702 710267.

London (East Ham) Amigaholics Club. Contact Kevin Bryan ☎ 071-580 2000 Ext 240.

London (Hampstead Garden Suburb) Amiga Club. Contact Imp ☎ 081 455 1626.

London (Winchmore Hill) Access Information Technology.Contact Darren ☎ 0956 229729.

London Twilight. Contact 13 Mavis Court, Ravens Close, London NW9 5BH.

Luton Luton Amiga Users Group. Contact Dave ☎ 0582 502806.

Mitcham PD for Beginners. Contact M Macias, 48 Lavender Grove, Mitcham, Surrey CR4 3HU.

Mundesley APDEG (Amiga Public Domain Exchange Group).Contact Richard Brown ☎ 0263 720868.

Newington Sittingbourne Co-op Amiga Club. Contact Andy ☎ 0795 842608.

Norwich AGA Exchange. Contact K. Phillips, 18 Brownshill, Cromer, Norwich NR27 0QA.

Norwich Magic Windows. Contact Frame, 26 St Benets Road, Stalham, Norwich, Norfolk NR12 9DN.

Orpington ICPUG South East. Contact Ien Beard ☎ 0689 830 934.

Romford Digital Disk Amiga. Contact David Cowell ☎ 081 590 2546.

Rye Rye Amiga Group. Contact Oliver Campion ☎ 0797 222876.

Southampton Blitz programming Club. Contact mr D Collins, 6 Bentley Green, Southampton SO18 5GB.

Southend-on-Sea Southend Team. Contact ☎ 0702 333974.

Sutton Agnus. Contact Philip Worrel, 115 Brocks Drive, North Cheam, Sutton, Surrey SM3 9UW.

Thetford Bizart Diskmag. Contact Stephen Marghan, Timberton House, The Mount, Buckenham Tofts, Thetford, Norfolk IP26 5HP.

Thornton Heath AmigaBASIC club. Contact: Imran Ahmad ☎ 081 689 9102.

Watford Hertfordshire Amiga Users Group. Contact Keith Alexander ☎ 081 421 1784.

West Watford AmigaSoc. Contact Neil Cartwright ☎ 0923 248483.

Witham Amiga Witham Users Group. Contact K Anderson ☎ 0376 518271.

Yarmouth Robotronix Amiga Club. Contact P Symonds ☎ 0493 667161

SOUTHWEST

Bodmin Amiga Users Klub (Bodmin). Contact Jack Talling, 1 Windsor House, 19 Castle St, Bodmin, Cornwall PL31 2DX.

Bournemouth Bournemouth Amiga Club. Contact P Chamberlain ☎ 0202 296714.

Bristol Avon Micro Computer Club. Contact Roger or Bob ☎ or Fax 0272 311642.

Bristol Bristol Amiga Club. Contact 3 Parkstone Avenue, Horfield, Bristol BS7 0BX.

Bristol EmuSoft. Contact Nalpex, 48 Longhandstones, Cadbury Heath, Bristol BS15 5AP.

Bristol Game Swap Club. Contact Ade Ajidahun ☎ 0272 240399

Dukinfield C.C. Swapshop. Contact Tom Hampson ☎ 061 339 9488.

Exeter Exeter 16-bit User Group. Contact Andrew Deeley or Phil Treby at 25A Gloucestershire Rd, Exwick, Exeter, EX4 2EF.

Reading Charlies PD. Contact Charles Read, 10 The Cedars, Tilehurst, Reading, Berks RG3 6JW.

Salisbury CHUD. Contact Mr M Sellars ☎ 0980 33154.

Taunton Imagine Object Makers. Contact Charles Mo, 16 Calder Crescent, Taunton, Somerset TA1 2NH.

Torquay Ami-Info. Contact Paul Caparn, Homeside, Higher Warberry Road, Torquay, Devon TQ1 1SF.

MIDLANDS

Birmingham 68000 in Birmingham. Contact Mike Bedford–White, 16 Westfield Rd. Acocks Green, B'ham B27 7TL.

Birmingham Software Exchange Service. Contact Michael Pun ☎ 021 459 7576.

Coventry Coventry and Warks Commodore Computer Club. Contact Will Light ☎ 0203 413511.

Hereford Hereford Amiga Group Help. Contact John Macdonald ☎ 0981 21414.

Loughborough BR & CJ Computer Club. Contact B Robinson ☎ 0392 72889 or 03922 841296.

Melton Mowbray Melton Amiga Users. Contact Stephen Mowbray ☎ 0664 63421.

Nottingham East Midlands Amiga User Group. Contact Richard Haythorn ☎ 0602 298075.

Solihull Deluxe Cheats Disk User Group. Contact Steven Frew, 96 Campden Green, Solihull, West Midlands B92 8HG.

Solihull Sid The Kid Amiga. Contact Sid Reeves, ☎ 021 705 8619.

Solihull Solihull Computer Users Group. Contact Rich or Lee, 41 Leafield Road, Solihull, W. Midlands B92 8NZ.

Sutton-on-Sea Aden PD. Contact Den Rounding, 8 Primrose Lane, Miami Beach, Trusthorpe Road, Sutton-on-Sea, Lincs LN12 2JZ.

Telford Shropshire Amiga Link. Contact N Cockayne ☎ 0952 591376.

Telford West Midlands Amiga Club. Contact Kevin Genner Telford Snooker Centre, Canongate, Oakengates, Telford, Shropshire.

Witney Cacophony (Unlimited). Contact Mark Wickson, 49 Perrott Close, North Leigh, Witney, Oxon OX8 6RU.

NORTHEAST

Balby Warpdrive. Contact B Scales ☎ 0302 859715.

Barnard Castle Amiga Users' Club. Contact Paul Kellett 67 Green Lane, Barnard Castle, County Durham DL12 8LF

Barnsley Amiga Programmers' User Group. Contact Andrew Postill, 2 Selby Road, Newlodge, Barnsley, South Yorkshire S71 1TA.

Catterick Champion PD Club. Contact Steve Pickett, 31 Somerset Close, Catterick, N Yorkshire DL9 3HE.

Chester-le-Street Chester-le-Street 16-Bit Computer Club. Contact Peter Mears ☎ 091 385 2939.

Darlington Darlington Commodore Users Club. Contact Steve Wheatley, 1 Ruby St, Darlington, Co Durham DL3 0EN.

Darlington Jemsoft Amiga Users. Contact Danwood, 3 Cavendish Drive, Darlington, Co Durham DL1 2GQ.

Durham The Amiga Club. Contact G Starling, 31 Pine Lea, Brandon, Durham DH7 8SR.

Harrogate Club 68000. Contact Chris Hughes ☎ 0423 891910.

Houghton-le-Spring Club Amiga. Contact Chris Longley, 5 Bowes Lea, Shiney Row, Houghton Le Spring, Tyne and Wear.

Keighley Pennine Amiga Club. Contact Neville Armstrong ☎ 0535 609263.

Mickley Nothing But AMOS Monthly disk magazine. Contact Neil Wright ☎ 0661 842292.

Otely Harley's PD Swaperama. Contact G Varney ☎ 0943 466896.

Rotherham Software City. Contact N Richards ☎ 0709 526092.

Sheffield Steel PD. Contact James Whitehead, 33 Middle Cliffe, Drive Crowedge, Sheffield S30 5HB.

Spalding TDM. Contact Gedney Marsh, Spalding, Lincs.

Sunderland Blitter. Contact Philip Kruman, 213 Fordfield Rd, Sunderland SR4 0HF.

Sutton-on-Sea Aden PD Club. Contact Den Rounding, 8 Primrose Lane, Miami Beach, Trusthorpe Road, Sutton-on-sea, Lincs LN12 2J2.

Tunstall The Amiga Studio. Contact Dave Rose ☎ 0782 815589.

Washington Mainly Amiga. Contact Ray Scott ☎ 416 9189.

Whiteley Bay Club Futura. Contact G Holland, 16 Hermiston, Monkseaton, Whitley Bay, Tyne and Wear NE25 9AN.

NORTHWEST

Accrington New Hall Amiga Users Club. Contact Bill Grundy ☎ 0254 385365.

Blackburn Blackburn Amiga Users Group. Contact Eric Hayes ☎ 0254 675625.

Blackpool Channel Z Diskmag. Contact Darren Busby, 3 Edelston Rd, Blackpool FY1 3HN.

Fleetwood Fylde Computer Club. Contact Colin Biss ☎ 0253 772502.

Lytham St Annes Amiga Users Group Part 2. Contact Andy Wilkinson ☎ 0253 724607.

Oswaldtwistle Hyndburn Amiga Users Club. Contact Nigel Rigby ☎ 0254 395289.

Skelmersdale Computeque. Contact Steve Lalley ☎ 0695 31378.

Stamford Under 18 Only. Contact Joe Locker ☎ 0780 64388

SCOTLAND

Angus Angus Amiga CDTV club. Contact J Robertson ☎ 0356 623072.

Bathgate Lothian Amiga Users Group. Contact Andrew Mackie, 52 Birniehill Ave, Bathgate, W Lothian EH48 2RR.

Cowdenbeatrh Amiga FX. Contact Ryan Dow ☎ 0383 511 258.

Dundee Tay-Soft PD Club. Contact Dave Thornton ☎ 0382 505437.

Dunfermline Dunfermline Sound & Vision Club. Contact Stan Reed, 7 Maxton Place, Rosyth, Dunfermline, Fife KY11 2DG.

Edinburgh Edinburgh Amiga Club. Contact Stephen Fradley ☎ 031 555 1142.

Edinburgh Edinburgh Amiga Group. Contact Neil McRea, 37 Kingsknowe Road North, Edinburgh EH14 2DE.

Glasgow Amiga Helpline. Contact Gordon Keenan, Amiga Helpline, 6 Skirsa Square, Glasgow G23.

Inverness Highland PD.Contact David Paulin ☎ 0463 242431.)

Johnstone Using AMOS. Contact Colin McAllister ☎ 0505 331342.

Perth Perth and District Amateur Computer Society. Contact Alastair MacPherson 137 Glasgow Rd, Perth.

Redburn Redburn Computer Users Group. Contact Ruby Anderson ☎ 0294 313624.

WALES

Bangor Amiga Maniacs. Contact Johnny, 8 Tan-y-Grais, Caernarfon Rd, Bangor LL57 4SD.

Carmarthen Bloomfield Video and Computing. Contact Mrs Beryl Hughes ☎ 0267 237522.

Clwyd ShieldSoft PD. Write to 26 Doren Avenue, Rhyl, Clwyd LL18 4LE, ☎ 0745 134 3044.

Clwyd Solo (Amiga). Contact Mike, 26 Doren Avenue, Rhyl, Clwyd LU8 4LE. ☎ 0745 343044

Neath Amiga Navigation. Contact Dave Thomas 4a, Allister St, Neath, W Glamorgan.)

Powys Blue Bedlam.. Contact Michael Grant ☎ 0873 811791.

SPECIAL INTERESTS, BBSs

1520 Plotter Group (ICPUG) John Bentley ☎ 06286 65932. (AS40)

1520 Plotter Group. Contact John Bentley ☎ 06286 65932.

Amiga Buzz BBS. Contact David Clift on 0924 494690.

Angus Amiga Musicians Club. Contact Gavin Wylie, Guthrie Street, Carnoustie, Angus.

Atlantic Wave BBS ☎ 0462 481745 (300 – 2400 baud 8N1) 24 hours a day.

Basingstoke AMOS Programmers Exchange. Contact J Lanng, 7 Majestic Rd, Hatch Warren, Basingstoke, Hants RG22 4XD.

Bidwell BBS. Contact SYSOP Mark Lunt Modem 0582 863 906.

Birmingham The Junction Box BBS. Contact mark Pegler ☎ 021 321 2235.

Branston Fen Amiga Boatowners. Contact D Beet Lock, Branston Fen, Lincolnshire LN3 5UN.

Braunston Nr Daventry GFA Basic Forum. Contact J Findlay ☎ 0788 891197

Braunston, Nr Daventry Amiga E Support Group. Contact John Findlay ☎ 0788 891197.

Broadstairs AMOS Programmer Club. Contact Gareth Downes-Powell, 6 Brassey Avenue, Broadstairs, Kent CT10 2DS. (AS40)

Camberley Independent Commodore Products Users Group. Contact Fred Wellbelove ☎ 0252 871545

Chelmsford Independent Commodore Products Users Group. Contact David Elliott ☎ 0245 328 737

Coventry Independent Commodore Products Users Group. Contact Will Light ☎ 0203 413511

Cumbria (Barrow-in-Furness) The Power Plant BBS. Contact Neal Postlethwaite ☎ 0229 431590.

Dublin Independent Commodore Products Users Group. Contact Geoffrey Reeves ☎ 010 353 1 288 3863

Exeter Independent Commodore Products Users Group. Contact John Buckle ☎ 0392 214760

Fife Teri-Odin BBS. Contact Derek Scott ☎ 0450 75081.

Glasgow 24-bit Club. Contact Gordon Keenan, 24-bit Club, 6 Skirsa Square, Floor 1, Glasgow G23.

Glasgow Action Replay Users Club. Contact Gordon Hagan, 66 Muirside Avenue, Kirkintilloch, Glasgow G66 3PR.

Highfields CDTV User Group. Contact Gary Ogden, ☎ 0785 227059.

Highlander BBS. Contact Alan Walker, Mark Price ☎ 0452 384702 & 0452 384557.

Impulse BBS. Contact James Norris ☎ 081 698 8978.

Lingfield In Touch Amiga. Contact P Allen, 0342 835530, PO Box 21, Lingfield, Surrey RH7 6YJ.

Liverpool Nickelodeon BBS. Contact ☎ 051 709 8508 (Liverpool).

London (Richmond) Micro Academy. Contact Don Pavey ☎ 081 878 1075.

London Independent Commodore Products Users Group. Contact the Membership Secretary ☎ 081 651 5436 (Fax 081 651 3428).

London On-Line Network BBS. Contact ☎ 081 539 6763 (London).

Look Northwest BBS. Contact ☎ 0282 698380 or 0282 619518.

Lothian Independent Commodore Products Users Group. Contact Andy Ruddon 65 Drum Brae Terrace, Edinburgh EH4 7SF.

Macclesfield Independent Commodore Products Users Group. Contact Peter Richardson ☎ 0298 23644

Maidenhead Independent Commodore Products Users Group. Contact Mike Hatt ☎ 0753 645 728.

Manchester CDTV Users Club. Contact Julian Lavanini, 113 Fouracres Rd, Newall Green, Manchester M23 8ES.

Mid Thames Independent Commodore Products Users Group. Contact Mike Hatt ☎ 0753 645728

New Whittington Digital Music Club. Contact Roger Hunt ☎ 0246 454280.

Normanton BASIC Programmers' Group. ContactMark Blackall ☎ 0924 892106.

Rochford Ray Tracers. Contact Neil Hallam, 12 Meesons Mead, Rochford, Essex SS4 1RN.

Romford Phoenix Demo. Contact Frank ☎ 081 597 4661.

Rotherham Marksman (Trojan Phazer user group). Contact David Green, 67 Thicket Drive, Maltby, Rotherham, S Yorkshire S66 7LB.

Solent Independent Commodore Products Users Group. Contact Anthony Dimmer ☎ 0705 254969

South East Independent Commodore Products Users Group. Contact Len Beard ☎ 0689 830 934.

South Wales Independent Commodore Products Users Group. Contact Mike Bailey ☎ 0446 775287

South West Independent Commodore Products Users Group. Contact Peter Miles ☎ 0297 60339

Southend-on-Sea Den's Den Mini BBS. Contact Dennis Luckett ☎ 0702 464818.

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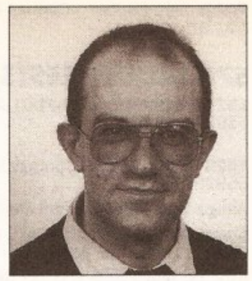
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AmigaDOS



Mark Smiddy explains how to make choices with AmigaDOS's pattern matching facility.

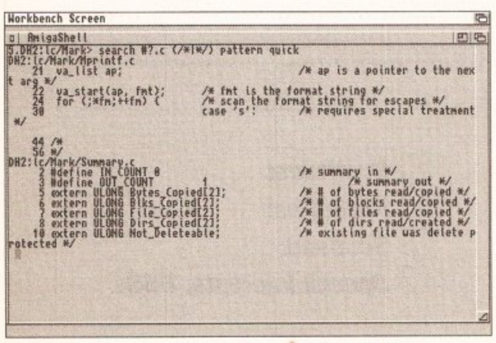
It doesn't matter which way you look at it, AmigaDOS is much more powerful than Workbench and, with some knowledge, can be more useful than utilities like *SID* and *Directory Opus*. In this installment, I'll be looking at pattern matching, a technique often referred to as "using wildcards". In spite of what you might think, pattern matching is simple. A good understanding of it can help you get the best from advanced directory utilities and even file requesters, let alone AmigaDOS proper. Patterns are used extensively with many AmigaDOS commands including COPY and DELETE, but they also crop up in some strange places like CD too. All will become clear.

Let's take an example from the real world. Imagine for a moment you are confronted with a pile of *Amiga Shopper* back issues and have to select numbers 10 to 21, 26, 27 and 29. Not a problem, provided they were sorted in numerical order. Now imagine you wanted to find every issue that had a printer review in it – that's a little more complex. Now, how about every issue that had a printer or disk drive review?

This is what pattern matching is all about; we specify a pattern and AmigaDOS searches for it. The example above is strictly a database job, but in essence a filing system is just a specialised database. Each record is a file and individual records are marked by a name, a filename. Now consider we have a list of files on disk named as follow (see "Testing Patterns" box for a method to check that these examples work as advertised):

- WorkFile
- Working1
- ScreenGrab
- Working2

Using Workbench (or a directory management utility) we can select any of these with a simple click. That's not too difficult for such a short list, but what if there were hundreds of files with similar names? This is where pattern matching comes in. We use special characters (called wildcards) to produce an ambiguous filename. In this case ambiguous means "something like". Ambiguous filename is a restrictive term to use in AmigaDOS, so we'll stick to the broader term, pattern. (A pattern is any string of characters: it does not necessarily have to contain wildcards and, as you'll see later, does not have to refer to a disk filename.)



Using SEARCH with patterns to locate the comments in a C listing.

The simplest wildcard is the query ("?") and matches a single occurrence of any character in the specified position. For example, given the list above, the following pattern:

- Working?

Matches:

- Working1
- Working2

There is no restriction on the number of wildcards that can appear in a given pattern. The following is quite valid:

```
????????
```

and matches three *files* thus:

- WorkFile
- Working1
- Working2

Given this, what does the following (10 queries) match from the original list?

```
??????????
```

There are two possibilities – a single string...

- ScreenGrab

...or, everything:

- WorkFile
- Working1
- ScreenGrab
- Working2

What did you think it should be? AmigaDOS matches *ScreenGrab* and a little analysis may help you see why (it's not immediately apparent). The ? wildcard *must* match something. *ScreenGrab* is the only string in the list that contains exactly 10 characters, and therefore is the only one that matches precisely.

SELECTING EVERYTHING

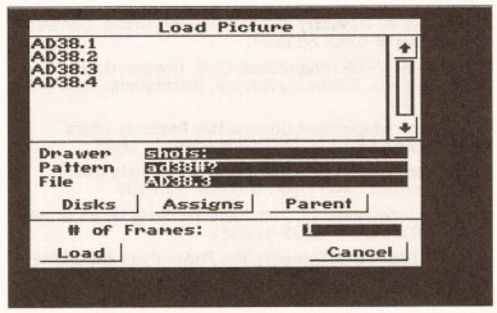
It would be a bit of a pain if you had to remember exactly how many letters make up a part of a string, so AmigaDOS provides a simple solution. The hash (or sharp) character "#", matches one or more occurrences of the pattern following it. This is incredibly powerful and potentially very complex because the pattern is analysed algorithmically. We'll come back to some of the ramifications of this shortly, but for now let's concentrate on the simplest use of hash.

The simple pattern "#?" is the most used in AmigaDOS because it matches everything. Literally, #? matches any number (#) of anything (?). Some commands, notably DIR and LIST, default to #?. Others, such as DELETE, do not. The reason for this is simple; LIST and DIR examine files so they usually work on everything; by the same token you would not normally want to DELETE everything! The multi-argument parser in AmigaDOS 2 causes some problems in this case, as we shall see shortly.

AmigaDOS matches patterns using a very clever algorithm that you don't need to worry about. It means however, it can make sense of some very bizarre constructions. For instance, if you wanted to get all files from the list that start with "W" you could use a pattern like "W#?" which selects:

- WorkFile
- Working1
- Working2

Similarly, the pattern "#?ing?" selects...



Even DPaint IV's non-standard file requester supports patterns.

- Working1
- Working2

...and, "#?g#?"

- Working1
- ScreenGrab
- Working2

DISASTER WARNING

Now you're getting more adept with patterns it's time to throw you a loop – the multi-argument parser. The following is illegal in AmigaDOS 1.3, but perfectly legal and potentially disastrous in AmigaDOS 2. Don't enter it.

```
1>DELETE W #?
```

This is a deliberate mistake, but it's very easy to make! The space between the W and the pattern is interpreted by DELETE as two separate patterns (this is not true of DIR, incidentally) and could be written thus:

```
1>DELETE W
1>DELETE #?
```

The second line attempts to delete everything in the current directory – it's a disaster just waiting to happen. There is no easy remedy to this; it is the price of power so be aware of it.

NOT A WILDCARD

Given all this information, when is a wildcard not a wildcard? When it's a wildcard escape character. Imagine you had a file on disk whose name contains a wildcard, what happens when you try to display it? The effect depends on the wildcard, its position, and the command you are using. But imagine the file was called #? and you wanted to get rid of it. Would you use DELETE like this?

```
1>DELETE #?
```

Of course not. Although that seems to be the logical answer, as has already been described, the pattern #? selects everything, and this command deletes everything. AmigaDOS provides a simple solution, a literal character (') pronounced tick; its

affect is to cause the next character to be interpreted as a normal letter. For example, the correct way to delete a file called #? is like this:

```
1>DELETE '#'?
```

Up until now we have been concerned with a single pattern matching a single group of files. However, there will be times when it is not possible to construct a single pattern which matches the files you want exactly. For example, assuming we have the following list:

- WorkFile
- Working1
- ScreenGrab
- Working2

and we want to select *Workfile* and *ScreenGrab*. These two have nothing directly in common, so it is impossible to devise a single pattern that matches both. Instead we have to join two separate patterns together using a logical "OR" – represented in AmigaDOS by a bar (|). Here's the complete pattern:

```
(S#?|#?E)
```

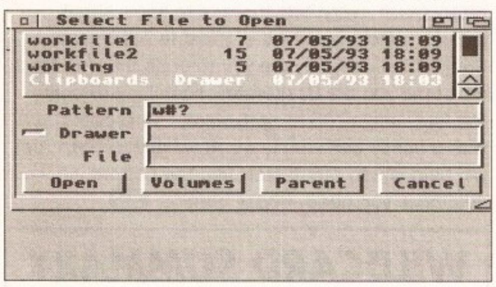
Note that complex patterns (groups) like this must be enclosed by parenthesis. Failure to do this results in a "bad template" error. The separate patterns being used here are as follows:

```
S#?Match anything starting with "S".
#?EMatch anything ending in "E".
```

Nothing says you have to use a wildcard in a pattern, so the following are quite valid too:

```
* (Screengrab|#?E)
* (S#?|Workfile)
* (Screengrab|Workfile)
```

The bar operator (OR) is a very common operation in computing so it is worthwhile examining what it does. It is based on a very basic principal called logic; unfortunately the name OR can be confusing. Designers use something called a truth table to define the characteristics of a logic operation; given a combination of inputs, the truth table gives



The standard Workbench 2 file requester (shown here larger than life) supports all standard AmigaDOS pattern matching.

the outputs in each case. The truth table for OR looks like this (where A and B are the two inputs):

A	B	Out
F	F	F
T	F	T
F	T	T
T	T	T

F = False, T = True

A truth table simply applies a logical operation to two (or more) conditions and produces a true or false result; it then shows the expected output for each combination of inputs. Truth tables are used extensively in binary arithmetic, and underly the basic operations of your Amiga. They also play a large part in programming, as well as AmigaDOS.

If you look carefully at the above table, you'll notice that the output is true if either of the inputs is true. The output is also true if both inputs are true. You may have been expecting the output to be false in this case – in fact, a separate logic function called Exclusive OR yields the result of false if both inputs are true – it's not implemented in AmigaDOS, so we won't discuss it further.

The meaning of the table in our context is this: if you supply two patterns separated by OR to AmigaDOS, it will choose all files that are indicated by either or both patterns.

When AmigaDOS analyses pattern it attempts to match any name against each possible combination. If we take the previous example pattern of (S#?|#?E) and apply it to each of the files, as AmigaDOS would, we get:

Input	Pattern	Logic	Result
WorkFile	(S#?|#?E)	(F OR T)	True
Working1	(S#?|#?E)	(F OR F)	False
ScreenGrab	(S#?|#?E)	(T OR F)	True
Working2	(S#?|#?E)	(F OR F)	False

AmigaDOS selects the strings that produce a true result, so if you used the above pattern with the DIR command, you would get the following files listed: *WorkFile* and *ScreenGrab*.

THUMB RULES

This is all rather complicated, and it is usually better to remember the following rule for OR: "Select the string if it corresponds to any of the patterns separated by a bar".

In keeping with electronic logic, AmigaDOS provides an operator to reverse the action of any pattern, pattern group or even a pattern within a group (although the latter is pointless). The operator is called NOT and is symbolised with a tilde (~). Anything that is true becomes false after a NOT operation; and anything that is false becomes true. The truth table for NOT is:

A	Out
F	T
T	F

The NOT function is useful for reversing your selections. Rather than selecting strings according to a pattern – a kind of "filtering" where only those strings that corresponds to the specified pattern perculate through – you can exclude strings according to a pattern, with only those that don't adhere to the pattern being selected. For example, given that #? selects everything, ~(#?) selects nothing at all. Note that you have to use the parenthesis when NOT is in effect.

One of the most common uses of this function is to remove the dot-info (icon) files in directory listings. Here's a typical example:

```
1>DIR SYS:~(#?.info)
```

Similarly, using the list above and given the pattern...

```
(S#?|#?E)
```

...selects:

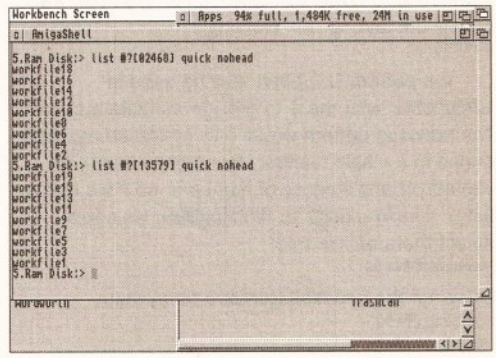
- WorkFile
- ScreenGrab

```
~(S#?|#?E)
```

selects the alternatives:

- Working1
- Working2

If you're trying this in any directory that has more than just these four files in it (the RAM disk, for instance, will have other directories in it) then you'll also get other files listed that don't begin with S or end in E. This effect is something to watch out for, as it can be confusing.



Above you see a prime example of extracting the odd and even numbered files using a group.

ADVANCED GROUPS

If you found any of the preceding information heavy going, you might like to go through it again with some files on your own disks and try to predict what will happen. A good place to start is your boot disk's C directory – that has a lot of similarly named files. Those of you who feel confident to carry on are about to enter some little-explored pattern territory added for AmigaDOS 2.

Imagine you have a lot files on a disk and want to perform some action on just those with numbered names. In the example list there were two numbered files, so we'll start with those. The obvious solution is to use a pattern like this:

```
Working?
```

That will extract all the files ending in a number, but it will also extract files ending in any old character. One of the newer pattern features provides a neat solution to this by allowing you to specify a range of characters. There are several variants of this, but the simplest one allows you to work on an ambiguous range – starting at some character and ending in some other. The range is always surrounded by square brackets and separated with a hyphen (minus).

So for example...

```
Working[0-9]
```

...selects:

- Working1
- Working2

TESTING PATTERNS

When testing pattern matching from AmigaDOS, it is useful to have some dummy files to work with. Using ECHO we can create some files to work with in the RAM disk and use DIR to check everything. The main examples in this text use a simple list of four files, which can be created in RAM like this:

```
1>CD RAM:
1>ECHO >WorkFile "Work"
1>ECHO >Working1 "Work 1"
1>ECHO >ScreenGrab "an example IFF file"
1>ECHO >Working2 "Work example 2"
```

When you want to test a pattern, for example #?, you just enter it after DIR (unless directed otherwise) like this:

```
1>DIR #?
```

It's important to note that [..-..] is a wildcard and does not break the pattern, and the range must be in ascending ASCII value (0-9, A-Z and so on). Also the range does not have to appear to provide a logical true. Therefore...

```
W#?[0-9]
```

...selects:

- Workfile
- Working1
- Working2

Compare this to **?** which must match with something. You can get around this by being more specific with the pattern string and provide something to break the pattern. For example, we'll supply the last "g" in "Working":

```
W#?g[0-9]
```

The pattern **[..-..]** can also be used in conjunction with the **#** to provide multiple matches. The previous pattern would only match strings that ended in a single number. By adding a hash, we can select any number of numbers; so if we had a list of files Working1 to Working999, we could select them all like this:

```
Working#[0-9]
```

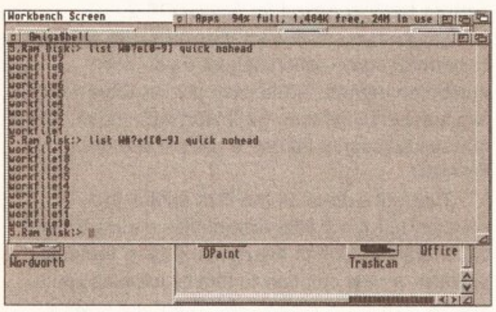
Or select the decades (ten at a time) thus:

```
Working[0-9]
Working1[0-9]
Working2[0-9]
Working3[0-9]
```

...and so on up to:

```
Working99[0-9]
```

All fine and dandy, but you might only want to select the odd or the even numbered files; they might be page numbers for instance. The character range is simple, but it does not cover this contingency; another mechanism must be used. The answer is just like using a range, but you supply the numbers (or letters) you want to match.



Using some files I created earlier, this shows use of a range to gain access to the decades.

For example, to get the odd numbers desired you might use...

```
Working[13579]
```

...and to get the even numbers:

```
Working[02468]
```

This can be successfully used with the hash wildcard to get any number of characters in the range, for instance:

```
Working#[02468]
```

This would even match bizarre names like: "Working0642482222" if anyone were crazy enough to create such a thing.

SEARCH PATTERNS ET AL

Few people would argue that one of the most powerful, certainly one of the most versatile commands in AmigaDOS is LIST. The inception of AmigaDOS 1.3 saw list get a very important upgrade, LFORMAT strings. This may seem like the dark ages now, but that little extra afforded a great deal of extra functionality to a wide range of AmigaDOS commands.

Two utilities are provided with all AmigaDOS versions since then that add pattern matching to single and double argument commands which lack the facility. These are SPAT and DPAT respectively and while not perfect, they make a difficult job a lot easier. You use either of these utilities (actually, they're both scripts) by adding them at the start of a command line and putting a pattern where a single filename would usually go.

For example, even in Workbench 3, VERSION does not have pattern matching facilities. For a quick check on the whole of your main AmigaDOS commands you might like to try this:

```
1>SPAT T:Vers VERSION C:#?
1>MORE T:Vers
```

Double argument (source/destination) commands are in very short supply, but two that come to mind are SORT and RENAME. RENAME is especially troublesome in early versions of AmigaDOS since it was impossible to move a group of files from one place to another on the same disk. DPAT gets around this problem thus:

```
1>DPAT RENAME RAM:Work#? T:
```

Perhaps a more relevant use of patterns is revealed with SEARCH and it is for this reason I hesitate to use the term filename, when referring to pattern matching. A pattern is a string of one or more characters: it doesn't just have to refer to a filename. The SEARCH command can be used to provide anything from a simple database to a debugging aid for C programmers.

You probably already know how to locate a file anywhere on a disk, but here's an aide-memoir in case you've forgotten:

```
1>SEARCH SYS: VERSION FILE ALL
Workbench3.0:C/Version
```

Similarly, you can use a pattern to locate a file using an ambiguous name:

```
1>SEARCH C: d#? FILE ALL
Workbench3.0:C/Date
Workbench3.0:C/Delete
Workbench3.0:C/Dir
Workbench3.0:C/DiskChange
```

However, you can use SEARCH to search the contentes of a file using a pattern too. If you have created a the test files in the RAM disk as suggested, you can try the following. Note in these examples the use of the QUICK switch to prevent SEARCH slapping unwanted output on the screen:

```
1>SEARCH RAM:#? ex#? pattern quick
RAM Disk:screengrab
  1 an example IFF file
RAM Disk:Working2
  1 Work example 2
```

Note that when a pattern forms part of the search string, you must tell SEARCH using the PATTERN switch; if not, the pattern will be interpreted as a literal. This feature is quite deliberate because wildcard characters can quite legitimately crop up in C and Assembly language listings. Used in this way, SEARCH can interpret the standard pattern matching characters or strings. For instance:

- Using a single character search...

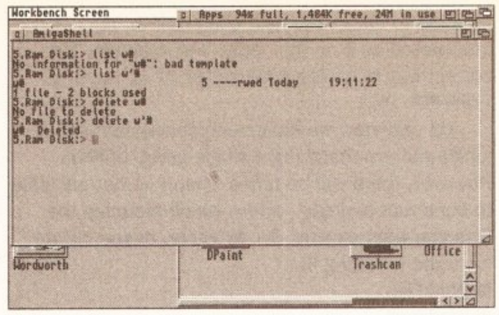
```
1>SEARCH RAM:#? [F] pattern quick
RAM Disk:screengrab
  1 an example IFF file
```

- Using a group range search...

```
1>SEARCH RAM:#? [0-9] pattern quick
RAM Disk:Working1
  1 Work 1
RAM Disk:Working2
  1 Work example 2
```

- Searching for comments in C code – note use of OR operator...

```
1>SEARCH C-Code:#?.c (/*|*/) pattern quick
```



It is possible to use wildcards in filenames, but can be problematical. Here I'm using the tick (') to escape the hash (#) and make it readable.

PATTERNS IN REQUESTERS

Workbench 2 heralded the start of a new drive towards standardisation of the Amiga's GUI, and one of the most important changes was the use of a standard file requester. A much less obvious part to this is the availability of standard pattern matching within the requester itself. Therefore, any program that supports the standard file requester will also be able to support standard filtering as described above.

There are a couple of fairly important considerations to make here. First, the standard file requester only applies the pattern to files, unlike AmigaDOS which can apply it to directories too. Also, some non-standard file requesters will support common patterns (like #?), but not the more advanced ones. When a program uses the standard file requester it isn't necessary to exclude dot-info files, using ~(#?.info), because this is already done for you automatically.

CONCLUSION

In this month's Amiga DOS feature you have learnt pretty much everything there is to know about pattern matching but were afraid to ~(#?[ask]). Congratulations! To help you through the minefield next time you are desperately searching through the taut AmigaDOS filing system, I've provided you with a handy and simple quick reference chart that will help you to effortlessly find the pattern sequence you need. Happy hunting. AS

WILDCARD SUMMARY

- **?** – Query. Matches any single character. Usually combined with **#**.
- **#** – Hash. Matches zero or more occurrences of the following character or class.
- **()** – Parenthesis. Enclose a grouped pattern.
- **|** – OR. Logically connects grouped patterns. Rule: "Select the string if any patterns separated by a bar are true".
- **~** – Not. Reverses the action of a pattern or group. Available from AmigaDOS 2 only.
- **[...]** –Class. Matches the zero or more characters enclosed by the square brackets. May be combined with hash.
- **[..-..]** – Ranged class. Matches zero or more of a range of characters (in ASCII value) from [start - end]. For instance, [A-Z] matches the alphabet characters and [0-9] matches numbers only.
- **'** – Tick. Interpret the following as a literal character, for instance, **'?**.

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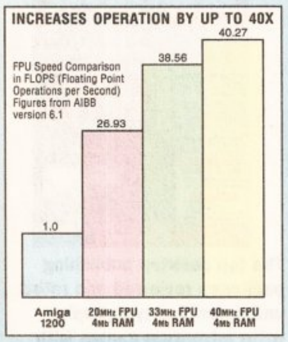
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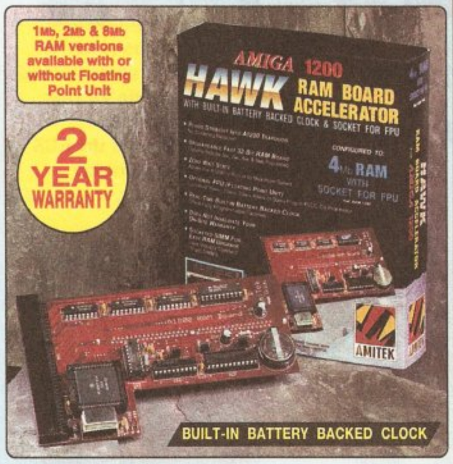
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Maximise the processing power of your standard A1200. Be ready for the new generation of software which makes more demands on Amiga memory and technology. The AmiTek Hawk RAM expansion includes up to 8Mb fast 32-bit RAM, the ability to support a sophisticated 68882 FPU (Floating Point Unit - drastically increases the speed of maths intensive operations) and a battery backed up clock. Built to a high standard, this board can be easily installed and comes with a 2 year warranty. The Hawk RAM board is available in 9 pre-configured versions enabling you to select the model which best suits your requirements.



1Mb, 2Mb & 8Mb RAM versions available with or without Floating Point Unit

2 YEAR WARRANTY



BUILT-IN BATTERY BACKED CLOCK

- Plugs straight into A1200 trapdoor - No soldering required
- Upgradeable FAST RAM board to 1, 2, 4 or 8Mb
- Uses industry standard socketed SIMMs for easy upgrades
- Two types of optional Floating Point Unit - 33MHz or 40MHz PLCC 68882 co-processor
- Comprehensive easy to follow manual with illustrations
- Works with all A1200 and A1200HD computers
- Does not invalidate your A1200 warranty
- 2 year warranty

	NO FPU	33 MHz FPU	40 MHz FPU
1 Mb RAM	£99 INC VAT - RAM 1210	£159 INC VAT - RAM 1213	-
2 Mb RAM	£139 INC VAT - RAM 1220	£199 INC VAT - RAM 1223	-
4 Mb RAM	£199 INC VAT - RAM 1240	£259 INC VAT - RAM 1243	£299 INC VAT - RAM 1244
8 Mb RAM	£399 INC VAT - RAM 1280	-	£499 INC VAT - RAM 1284

PRICES FROM ONLY
1Mb RAM, NO FPU
£99
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1Mb SONY® 3½" DELUXE FLOPPY DRIVE
FOR ALL AMIGA COMPUTERS

SONY MECHANISM



2 YEAR WARRANTY

'Amitek's new disk drive combines an elegant design, high build quality and smooth performance in a very affordable package. Highly recommended'. Jason Holborn - Leading Amiga Journalist

DELUXE FEATURES
The AmiTek drive has been specially designed to meet the needs of Amiga users and has many deluxe features which are not included in other drives - check out the competition!

ANTI-CLICK
The anti-click feature stops your drive from making lengthy whirs and clicks that occur when the drive is empty and searching for a disk.

ANTI-VIRUS
The switchable Anti-Virus mode stops track 0 viruses infecting the disk while in the drive. Yet, unlike many other drives which have virus killers, this Anti-Virus mode can be disabled, allowing some fussy copy protected software to run.

ADD ADDITIONAL DRIVES
As a double sided mechanism, the AmiTek drive gives 880K of disk space after formatting. It is also daisy-chainable, which means that you may add further drives to your system and, uses very little power from your Amiga.

HIGH QUALITY SONY MECHANISM
AmiTek took the time to source a mechanism that has all the features, quality and reliability that Amiga owners have been crying out for. After vigorously testing Sony's mechanism, it proved to be the best by far available.

- HIGH QUALITY 3½" SONY MECHANISM
- STRONG METAL CASING
- BUILT-IN ANTI-CLICK FEATURE
- SWITCHABLE ANTI-VIRUS MODE
- ENABLE/DISABLE SWITCH
- 75MS ACCESS TIME
- DAISY CHAINABLE VIA THRU PORT
- LOW POWER USAGE
- NO NEED FOR EXTERNAL PSU
- 2 YEAR WARRANTY

Details taken from models available MARCH '94	ANTI-CLICK	ANTI-VIRUS	STRONG METAL CASE	QUALITY SONY MECHANISM	TOP RATED CU-AMIGA MAY '94 90%	2 YEAR WARRANTY
AMITEK	✓	✓	✓	✓	✓	✓
CUMANA	-	-	-	-	-	-
POWER E	-	-	✓	✓	-	-
ZAPPO	-	-	✓	-	-	-

EXTERNAL DRIVE
£59
INC VAT - DRI 1159

1Mb INTERNAL FLOPPY DRIVE
FOR AMIGA 500/500PLUS



The internal AmiTek replacement drive is ideal for users who wish to replace their existing internal drive.

The pack features a high quality internal 1Mb, 3½" drive mechanism for the Amiga 500/500PLUS. All you need to fit the drive is included, plus easy to follow fitting instructions and 24 months replacement guarantee.

2 YEAR WARRANTY

INTERNAL DRIVE
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INC VAT - DRI 3600

PCMCIA CARDS
FOR AMIGA 600/1200

2 YEAR WARRANTY



For sheer ease of use and flexibility you can't beat AmiTek's PCMCIA RAM upgrades. These compact credit card sized upgrades slot into the PCMCIA port on your A600 or A1200, increasing the RAM by 2Mb or 4Mb.

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FOR ALL AMIGAS

NEW!



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- High quality design
- FREE RF cable supplied

MODULATOR
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FOR AMIGA 500/600

Many business packages and advanced games require more than your Amiga's standard memory capacity to run at their full potential. The AmiTek range of RAM upgrades is the perfect way to add that extra memory capacity to your system. The following RAM upgrades are all trapdoor cards and fitting will not affect your Amiga's warranty.

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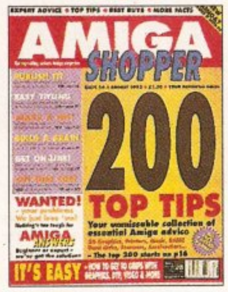
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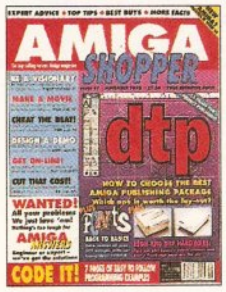
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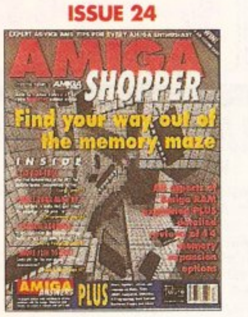
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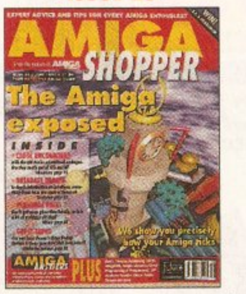
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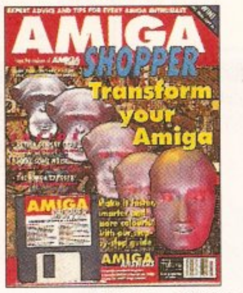
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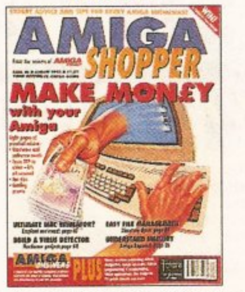
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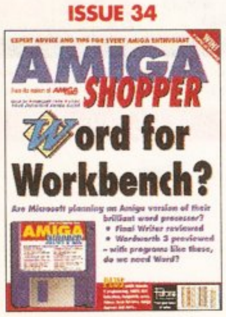
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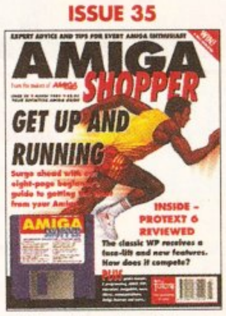
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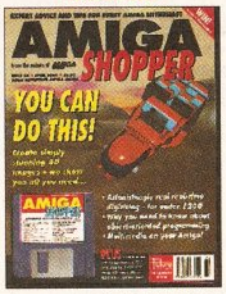
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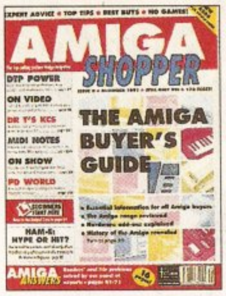
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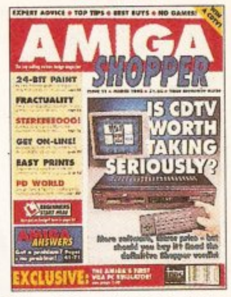
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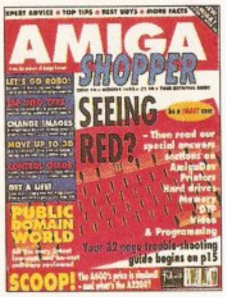
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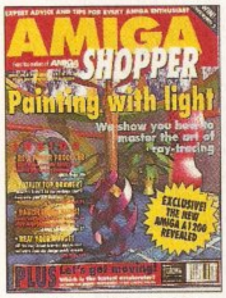
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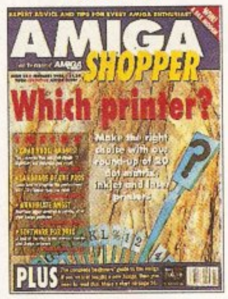
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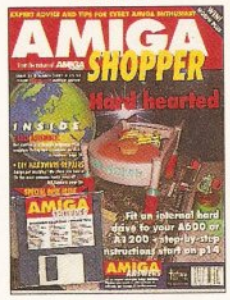
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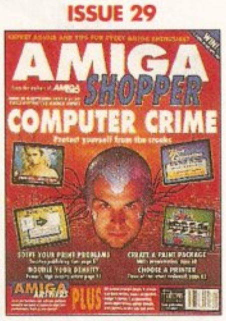
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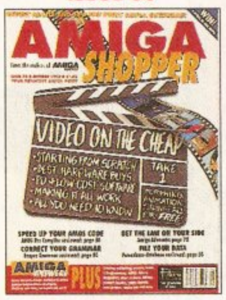
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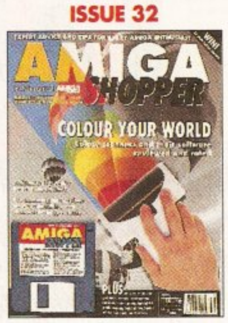
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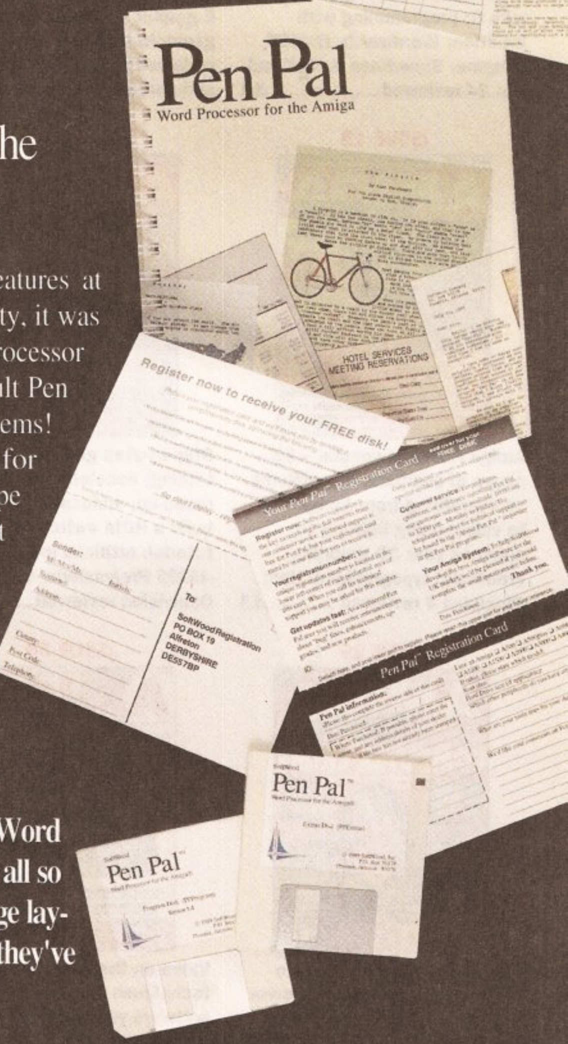
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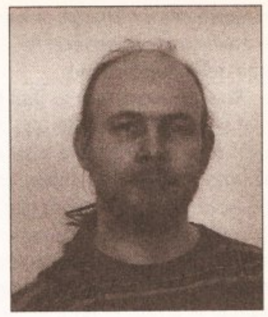
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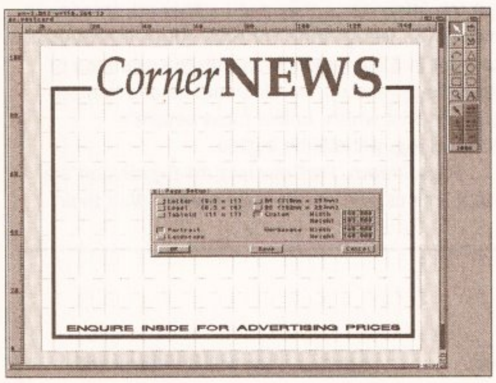
The world is designed



Jeff Walker provides some handy tips for budding desktop publishers who want to take the first tentative steps towards running their very own business.

What's the connection between a milk carton, the money you pay for it, and the place you buy it? Give up? It's simple really – they have all been designed. All around us, every day of our lives, we are confronted by design. Most of it goes unnoticed. Sure, we can all see the Lloyd's building, a Ferrari or a Henry Moore sculpture as design, but that's not what I'm talking about. I'm talking about cereal boxes, paving slabs and CD boxes. Next time you pick up any man-made object, have a proper look at it and think of the faceless design team that created it – because unless it is a very unique design, you won't see the designers' signatures on it.

Even with just a small Amiga and a little memory you can add to this designed world of ours. All you need do is look around for opportunities. A starting point that anyone can work from is the newsagent's window. On it you will often discover a dozen or so scrappy postcards of various sizes, in various styles, containing various qualities of handwriting with various "standerds ov speling." Offer the newsagent a neat, printed replacement, possibly with the shop's own logo on it, and, provided it's cheap enough, he'll jump at the chance.



You could design either standard cards for people to write on to, or, if you are very local to the newsagent, you could offer to typeset each window advert as it comes in. It won't take five minutes and a well-presented advert will stand more chance of selling what's on offer, thereby gaining the newsagent's window a reputation for quick sales.

Now, when I say cheap, I mean really cheap, because you have to remember that he will have had the current system in operation for many years, and you will be the first person who has ever complained about it. Some newsagents don't charge for cards in the window and as they are not making any money from it themselves, they may not be too interested. In any event, take some samples with you of other work you have already done, and some mock-ups of the cards you intend putting in his window. Create a generic card with a sample logo on it. If you can offer a larger display for the cards to be stuck on to, with the newsagent's logo on it too, it will make you seem all the more professional.

You don't need to go in a suit and tie to make your presentation. It might be in your favour that the newsagent recognises early that you are doing this as a hobby, for pin money, that you are not a DTP mogul.

After you have convinced one newsagent you will have more confidence and a greater ability to get around objections to your service. Plus you will have the killer sales line: "Well, Smith's have got my cards in the window..."

If you can't find a newsagent who is willing to take up your services, don't worry – there are other avenues. You should definitely not get disheartened. Building up a clientèle takes time and you must be prepared to accept plenty of rude answers with a smile on your face and a thank-you on your lips.

ON THE MENU

Every time you go to a restaurant you are, not surprisingly, confronted by a menu. Some restaurants go to great expense to have menus printed, but a lot have a typed or handwritten menu, replete with spelling mistakes, bad layout and corrected pricing errors. You can offer them a beautifully laid out, well spelt alternative that can be readily updated.

Menus are a great deal tougher to create than advertising postcards. For a start, the sheer variety of styles of menus, A4, A5, three-fold, two-fold and so on, will lead to design complications, but nothing that cannot be overcome by a little thought and research. The typeface you use is going to be of paramount importance to the restaurant, which will almost certainly already have a defined style particular to them. They might want you to use a certain font, so keeping up your font library is very important. Thanks to companies like EM Computergraphic, buying Amiga outline fonts is not

REGULAR DTP

If your DTP output becomes a regular affair – making postcards for newsagents, menus for restaurants, and so on – you don't want to have to keep reinventing the wheel. This is where proper organisation helps.

Keeping a master version or *template* of your blank document is all important, so that you don't have to edit previous real versions and possibly overwrite them. (I've done it, it's not funny.) With a master version handy you will cut down the time it takes you to create a document – especially important if it's a boring and repetitive task like a postcard.

And I know few of you like them, but style tags and paragraph tags are great time savers. They enable you to set up your own distinctive styles, which will be adhered to and applied to other documents. They will also make it easy to distinguish between the various different companies you do work for. Rather than having to go to old documents to find out what font you used for the body text of a menu, wouldn't it be easier to just look for the name of the restaurant in your style tag list and just use the tag you defined for body text?

If your DTP program or word processor enables you to define master pages, they too can be great time savers. Rather than having to repeat the restaurant's logo at the top of every page you lay out, the master page can do it all for you. You can even use them to put your credit on every page of every document you create.

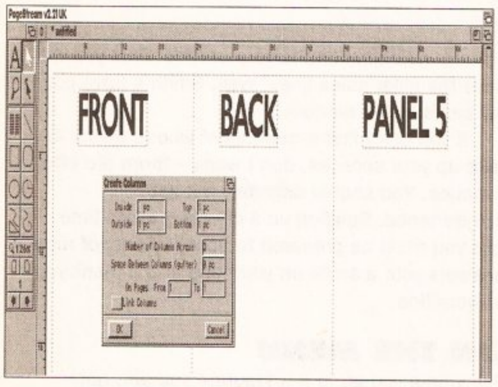
Naming your files sensibly is also to your advantage. Naming a file as 'Menu' is all very well if it is to be the only time you ever create a menu, but calling it 'LaDolceVita-menu-Sept' not only tells you for whom the document was created, but also what sort of file, and when.

If your work is to be recognised it is important not to keep chopping and changing your style. If you always use a certain type of font, people will come to associate that font with your work, which will help them to see your touch. This is not to say that everything you do must be in that font, most of your customers will want to choose their own typestyles, but you can include your credit, if suitable, in your style, or make sure that the documents you produce are all laid out a certain way.

an expensive or difficult process, so there should be no excuse whatsoever for not having a very large selection to hand.

Your next problem is that the restaurant might have a logo they want to use on the menu, or they might require things like Visa and Access logos, or the vegetarian food symbol. You can get the Visa and Access logos in most clip art collections, but it's unlikely that you'll be able to find the vegetarian food logo or the restaurant's logo. The secret to incorporating existing logos in your designs is either to do a bit of cut-and-pasting, or to buy a scanner of some description. A video digitiser isn't really suitable for this purpose because you will need the digitised image to be at a very high resolution for printing.

Once you have a digitised image, don't be tempted to autotrace it into a structured drawing as the results will almost certainly not be as high quality as a bitmap image printed at the correct scale (see last month's DTP column). Do bear in mind that large bitmaps take a lot of RAM, and that printing times will potentially be increased with their inclusion in a document.



Three-folds are useful for menus and brochures, but it is of utmost importance to design them correctly. The front, back and fifth panel are on one side, panels two, three and four are on another sheet (the other side).

Printing menus for restaurants requires that you have a good line of communication with the restaurant owner in order to avoid errors like Flied Lice appearing in your final artwork. When dealing with a restaurant that serves foreign cuisine, make sure you go over the spelling of the names of the dishes thoroughly, and remember that the restaurant owner might not have as good a grasp of spelling as you do. Nothing makes a business look so foolish as a silly spelling mistake in its advertising or other literature, and your clients will thank you if you check that their spellings are correct.

It would probably be best to steer clear of offering your services to a restaurant that requires its menu to be in a foreign language as well as English, unless you are familiar with that tongue. Also, you will find it difficult to provide typesetting for menus in Chinese for example, or indeed in any language that does not share our alphabet.

WINDSCREEN SWIPERS

Another way to make cash is to look for cars that are for sale in your neighbourhood. You will always be able to spot them because they will have a hand-written sign in the windscreen saying "Ford Capri FOR SALE 1 Carful Owner Full MOT And Tax For A Yr. Call 123456 £1200 ono."

Instantly your mind should be racing ahead. If this person really wants to sell their car, a brighter ad would catch people's eye, and a better laid out one would make it easier for prospective buyers to get the information they need. Other advantages to having you design their For Sale notice is that you can put in a big headline to grab the attention of passers-by, and put in additional details in much smaller print which, unlike most people's handwriting, will still be legible.

PageStream, *ProDraw* and *Art Expression* are ideal for this sort of one-page poster. With their

HOW DO I DO THAT?

Many designs appear to be quite complex, and the newcomers to desktop publishing can sometimes lose work because they cannot fathom how a particular item is produced.

Take the three-fold brochure for example. A three-fold brochure design consists of six panels on two sheets, three panels on each. The first panel is the front cover. The second panel, however, is not on the same sheet, it is the first column on the second sheet. The third panel is the second column on the second sheet, and the fourth panel is the third on the second sheet. The fifth panel is the third on the first sheet, and the last or sixth panel is the second column on the first sheet.

Confused? So get an existing brochure and trace the path for yourself. And that's the secret to learning how anything is designed. Get hold of one and examine it. If it's a wrapper of some sort, pull it apart to see how it has been stuck together. Then spend some time reproducing it with your DTP package.

Time spent practising designs that are new to you, and time spent attempting to improve or simplify those designs, is money in the bank.

SELLING YOURSELF

When you start to work for yourself you will need SOS – Stamina, Organisation, Self-discipline.

Stamina and self-discipline are difficult enough to attain, but organisation, or rather the lack of it, can kill your business before it starts. There are a number of things that you should definitely organise.

Maintain a database of anyone who shows any interest in what you are doing. This will enable you to store notes about that client's business, meaning that you can appear well-informed and avoid faux pas such as asking how a client's wife is when last week he told you she had died. OK, that's a bit extreme, but when you are rushed off your feet and don't have time to think, you tend to readily forget small details. Little things mean a lot, and a note on your screen will help you immensely.

A client database will also help remind you of things that might have been put off for some time, enabling you to ring and say: "At Christmas you said I should call you in July. It's now July, so...". Take it from me, this will impress your clients no end.

Before you start selling your DTP services it is a good idea to make some mock-ups of the products you are trying to sell. Having a presenter or a folder with plastic pockets to show off your wares will dramatically increase your chances of making a sale because you will be giving a prospective client concrete proof of your skills.

Once you have a few clients, replace your mock-ups with actual examples so that new clients can see names they recognise.

Always dress smartly when going to sell your product. This doesn't have to mean a suit and tie, but, if you want the business, you shouldn't look scruffy or appear unreliable. And all you macho blokes out there, watch your fingernails. When showing a prospective client examples of your work, your fingernails will almost certainly be in view. Chewed and dirty fingernails give the impression that you do not care much about appearances, yet design is all about appearances. Get my drift?

Also bear in mind that although each of your clients might be paying only a small amount of money, every single one of them is very important. They are the way you will get new business, and they can stop you from getting new business. Treat each of your clients as a friend and you won't go far wrong.

The last thing to think about is how much you should charge for your services. This is a tough one because, without experience, you aren't going to know the going rate for printing menus or posters or whatever. You will need to gauge this aspect of the business very carefully. Ask for too much money and people won't use you. Ask too little and you might find it difficult to motivate yourself, and to stay in business if you decide to do it full time.

Remember that undercutting everyone in sight is not a good idea in the long term. When established businesses discover they are being undercut, they will fight back with their own price cuts and/or special services. Many's the one-man-band who has been blown away when his already-as-low-as-they-can-be prices are suddenly halved by a local rival who has greater resources to draw upon. You've got to box clever. Keep in mind that, from a client's perspective, you can always put your prices down, but raising your prices is next to impossible. For this reason you should err on the side of overpricing, and then, if you run into price difficulties, offer special bulk discounts, extra 'free' services and higher quality end-results.

Never ever revise your prices on the spot, you will come across as desperate for the business and the client is liable to hold out for further price cuts. Most importantly, never put down the company or person that is currently designing a prospective client's artwork. This is not a professional manner, and many clients will be put off because they will worry about what you might say about them behind their backs.

ability to stretch and distort text, you can create word shapes to fit the available space on your page. But be cautious about distorting your letters too much as the poster needs to be read from a distance.

One way to spruce up the poster – a way that doesn't rely on you having a colour printer – is to print on to fluorescent paper. This normally comes in packs of about 50 sheets in four different colours. The paper tends to be pretty thin, so is better suited laser printers than inkjets, but experimenting with different densities of print could lead to quite acceptable output if you don't own a laser printer. Remember that putting a graphic element on the page, a humorous cartoon, several large £ signs, will break up the text and make the poster really stand out.

Similarly, if you see posters advertising events like a jumble sale or car boot sale, you can go along to them, find the organisers, and offer to lay out the poster for the next sale. Your skills at lay-out will probably not be too taxed by this sort of DTP, but always try to get some sort of graphic element into your design. For a car boot sale perhaps an image of an old jalopy with its boot open would be suitable.

Most importantly, always remember when you are trying to get the business that you should never put down the existing poster's design. For all you know the organiser might also be the poster designer who is very proud of his work. Instead, suggest that your poster would be a cleaner design with even better lay out.

ASKING FOR CREDIT

None of these ideas on their own are going to make you a living, but servicing three or four newsagents, a couple of restaurants and the local Women's Institute will keep you in pocket for very little effort. And once you have built up a clientèle you will find that you will get people ringing you out of the blue because they heard about you from a friend who has a brother who is married to a woman who owns a restaurant that you did all the menus for.

You can speed up this process by asking your customers if they mind if you put a credit to yourself on their artwork, something discreet at the bottom of the page maybe, saying: "This menu was designed by Gary Fruitfly Design ☎ 0323 536454". Don't mention the Amiga, nor what package you laid it out with, nor what printer you used – most people won't know or care, and it will make you look unprofessional, or like a 'plonker' to use the technical term. Some of your customers may object to this self-promotion. If so, leave it out and don't mention it again.

If you have designed a restaurant's menus and wine lists, you may be only a small step away from designing their invoices and other business forms. You won't normally be able to print these yourself, but you can create the artwork that will be used by a printing company to create pads of forms for the restaurant to use. At this stage it is a good idea to hunt around for a firm of printers which is computer-minded and willing to experiment. You should ask if they accept printing jobs from PostScript files and, if so, what format disk should they be on. Usually they will accept PostScript files on Mac or PC formatted disks with no problem, but you may find yourself out of your depth when your printer starts talking about under colour removal and the various processes required. Printers are like mechanics, they are proud of the knowledge they have attained and slightly scornful of civilians, but explaining what you want to do in detail and asking a lot of questions about anything you don't understand will almost always gain your printer's respect, at which point they start becoming extremely helpful.

Lastly, it is worth mentioning that if your business starts to grow, it is a good idea to plough the money back into your set-up, especially if you are not dependent for a living on the money you are making. Adding a hard drive, or a bigger hard drive, a decent laser printer, proper monitor, memory, an accelerator... all these extras will help you in the long run, enabling you to become more productive, faster at turning orders around and generally much more efficient.

If you feel the need to trade in your Amiga for a bigger and better one to get these benefits, I would recommend steering clear of buying an Amiga 4000/030, but get an Amiga 3000 instead, which, although they are actually no longer built, are still readily available. With a 3000 you get built-in SCSI, making it cheaper to add SCSI hard drives; a built-in flicker fixer, so you can buy a cheap VGA monitor and get a rock steady display at a high resolution; and a built-in maths co-processor, which will speed up certain operations. The added colours of AGA are not important unless you are going to be designing full colour brochures and so on, and the Amiga 3000 is very cheap right now. The money you save might even buy you a 24-bit display like the Retina or Picasso, which would give you much better graphics than AGA anyway.

Many Amiga owners have a dream of running their own little design and desktop publishing service, and many give up before they have given it their best shot. Use this fact to your advantage. While the others are giving up, you keep going. It's the leg work that will make it happen, and even then it is not going to happen overnight, but if you give up too soon you will spend the rest of your life wondering what possibly might have happened if you had persevered. AS

OVERPRINTING

One way to really impress your clients is to offer them a four-colour print run at lower prices than they would be able to achieve at a normal printers for such a low volume.

Overprinting is the technical term for it, and a large number of printers and desktop publishers all over the world do it.

In its simplest form it involves you sending your page through the printer more than once, changing the colour of the ribbon, ink cartridge or toner cartridge. But a new trend has started up with paper companies offering papers that are designed to be overprinted – Paper Direct, for example. Why not call freephone ☎ 0800 616244 and ask for a catalogue?

These papers have a design on them already, and after you have printed over the top it looks as though you have printed the whole thing. Such paper is obviously a lot more expensive than standard photocopier bond – for A4 designed papers we're talking about 20p per sheet, and they come in boxes of 100 normally – but it is usually fairly heavy and has a quality feel to it, so for final artwork it is ideal.

You can take the whole process one stage further by overprinting on overprinted paper. Take your overprinted paper, print your normal black text on it, switch ink/toner cartridge and then run the paper through again, printing the parts of the page you want in red, say.

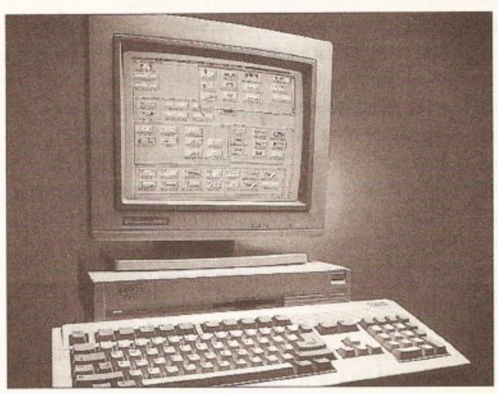
Some of these paper companies now go one step further from merely offering standard A4 with a border, or in a letterhead style. They now have three-fold brochures and other complex media like A4 sheets containing four A6 postcards or 10 business cards on them, with perforations that don't show when the cards are separated. They even offer matching envelopes.

The three-fold brochure make ideal menus for cocktails, wine lists or food, and the postcards would sit very nicely in the windows of newsagents. Rather than going to a printers to get yourself some business cards made up, or using one of those tacky foil printers they have at railway stations, why not have a gander at overprinting business cards? The paper will probably cost you the same as getting the cards printed by a printer, but you can just print 10 off at a time if you wish, and you can change the details of the card at any time.

This might be a popular service that you could offer your clients...?



ProDraw's ability to load and print bitmaps as well as structured drawings can come in extremely handy whenever you wish to include scanned artwork in your designs.



While the quite obvious choice may be to upgrade to an A4000/030, desktop publishers are much better off with an A3000 because you can pick them up for a snip, and the A3000 comes with a built-in flicker-fixer, built-in SCSI, and built-in maths coprocessor. The money you save could be well spent on a multiscan or VGA monitor and 24-bit graphics card!

C PROGRAMMING

Sorting data is one of the fundamentals of programming. Toby Simpson shows you how to do it the quick and easy way.



Sooner or later, you're going to need to sort a list of something into a different order. Be it alphabetic or numeric, or one of many other possible orders, you are swamped with a multitude of methods of doing it. There are many complex fast sorting algorithms which work using recursion, but the one we shall learn is perhaps the simplest and most straight forward of all, the bubble sort.

The listing opposite shows a complete bubble sort program, the sorting code itself is actually only 12 lines long, including comments. The rest of the program is to allow us to enter the words we're going to sort, and to show the results at the end. This program has been tested with both SAS/C 6 and DICE C.

What *is* a bubble sort then? It's certainly not the most powerful and efficient sorting algorithm in the world, but it's one of the easiest to learn and use. It works by "bubbling" up the items which should be at the top of the list, one place at a time, from their current position. We're going to be using it to sort words into alphabetical order. To do this we are defining an array of pointers to strings. When the user inputs a word, memory is allocated for that string and the pointer to that memory placed in our array. This means that the strings take up the minimum amount of memory. Let's look at this string entering first:

```
gets(work_string);
/*
** Allocate RAM for the string just entered:
*/
if (!(words_to_sort[loop] =
malloc(strlen(work_string) + 1)))
  {
  /* this bit if the above failed */
  }
```

This is quite a complex line. **words_to_sort** is our array of character pointers, and **loop** is the current count of words which have been entered. **work_string** is a string variable which contains the string the user has just entered; we used the **gets** function to do this. We then use the **malloc** function to allocate some memory, the amount of which we determine by getting the length of the string and adding one. The reason we added one byte to the memory allocated is that strings have a NULL character at the end to terminate them. One of the most common bugs in beginners' C programs is caused by forgetting this hidden character, as **strlen()** returns the length of the string *without* the trailing NULL. **malloc** returns either a pointer to the memory it has successfully allocated, or NULL if it has failed. We assign this value immediately to our array of pointers. By enclosing the entire expression into an **IF** line like this, we can also detect if it has failed. If **malloc** does fail, we free any memory we have allocated so far, and exit the program. We have a small function called **free_words()** which frees the memory occupied by our strings, and looks like this:

```
int loop = 0;

while (words_to_sort[loop])
  free(words_to_sort[loop++]);
return;
```

Note that it keeps going through the pointers freeing them until it comes to a blank one. If we successfully entered all our strings to sort, the program puts a NULL at the end of the list of pointers as a marker for **free_words()**. If we failed because we ran out of memory, our **if (!(.... malloc))** line would have placed a NULL into the array for us to mark how far we got.

Having entered all the strings, we can then set about sorting them. The sort loop itself is very straight forward. We don't actually move any of the strings anywhere, we just move the pointers around. This is far more efficient, as to swap two strings over we just have to move two pointers rather than copy two strings around. We could have written this sort to work with strings rather than pointers, and the results would have been much slower, as swapping two strings could potentially involve re-allocating string space if one was larger than the other, and physically moving each character. So, how does it work?

We use a **for(..)** loop to scan through our list of pointers. Then, using the **strcmp()** string compare function we see if the current string should actually be below the next one in the list. If it is, then we call **swap_pointers** to swap the two over. The result of this is that one of the strings which should have been higher up in the list has just "bubbled" up one place. If we do call **swap_pointers** during our **for** loop, then we set a flag. If the flag has not been set, then the list is in perfect alphabetical order so we can exit now. If not, then there are still strings which need bubbling up further, so we repeat the for loop until the sort is complete. The advantage of this particular method of bubble sorting is that the sort loop stops immediately after the sorting is done – in fact if the array is in perfect alphabetical order, the loop only happens once. In theory, the **for(..)** loop could need to be run as many times as there are words if, for example, the bottom word in the list was going to have to be bubbled right to the top. Occasionally I see some bad implementations of the bubble sort which replace this flag system we use to stop when it's actually done with another **for** loop, which goes around the maximum number of times needed rather than the minimum. Our entire sort looks like this:

```
do {
  flag = FALSE;        /* No swaps this loop */

  for (loop = 0; loop < (words_entered - 1);
loop++)
    {
    if (strcmp(words_to_sort[loop],
words_to_sort[loop+1]) > 0)
      {
      /* We need to swap these two: */
      swap_pointers(loop);
      flag = TRUE;
      }
    }
  } while (flag == TRUE);   /* Keep going till
there are no more swaps */
```

We use a **do .. while** loop to continue going through the sort loop until there are no more swaps to do. If a swap happens the pointers are swapped, and the swap flag gets set to true, which the **while (flag == TRUE)** will pick up. Another easy bug to make with C programming is to confuse, or mistype the == double equals sequence. In this case, if you change the **while** to be...

```
while (flag = TRUE);
```

... the compiler won't object to this at all. It's just that the program won't work properly. The loop will continue for ever, as the expression inside the **while**'s brackets first assigns a value of **TRUE** to **flag**, meaning the condition is always true. Whilst we're on this particular oddity of C it's worth giving another example of how it can mess you up, because if you're prepared for it and can understand the circumstances under which it is a risk, you can go a long way to avoiding the problem in the first place. Take this library opening code:

```
#include <stdio.h>
#include <exec/exec.h>
#include <clib/exec_protos.h>

void main(void)
{
 struct Library *DosBase;

 /* Open dos library V33 (1.2) */
 DosBase = OpenLibrary("dos.library", 33L);

 printf("DosBase was %ld\n", DosBase);

 if (DosBase = NULL)
   {
   printf("Failed to open dos library\n");
   return;
   }

 printf("We're about to use a dos.library
function, DosBase is %ld\n", DosBase);

 CloseLibrary(DosBase);
 return;
}
```

This should seem really obvious. We open the dos.library; if it is **NULL** we exit, then we use it, and then we close it. Have you seen the bug in it? In the line where we go:

```
if (DosBase = NULL) ...
```

We actually *set* DosBase to **NULL.**, so it won't

GETTING STARTED

If you're interested in learning to program in C, I'd recommend a shareware compiler called *DICE*. If you register this product you get a full version with many added features. The listings here have all been tested with *DICE*.

A good way of getting hold of DICE is to buy Cliff Ramshaw's book *Complete Amiga C*, available directly from Future Publishing, or from any large book store. See page 82 for details.

***Complete Amiga C*, by Cliff Ramshaw**
£24.95
Future Publishing ☎ 0225 822 511

LISTING

```
/****************************************
 *
 * Bubble Sort Program in ANSI 'C'
 *
 * Type in and save as "bubble.c" to compile
using Dice type:
 *   dcc bubble.c -o bubble
 * The executable will be called "bubble", and
you can run it from the Shell.
 * To run under SAS/C 6 and above, copy
bubble.c into a copy of the "starter_project"
drawer
 * and double click on the "Build" Icon.
 *
 * (C) Copyright Amiga Shopper 1994, June
Issue
 * By Toby Simpson
 */

#include <stdio.h>
#include <stdlib.h>
#include <string.h>

#include <exec/exec.h>

#define MAX_WORDS      10

/*
** Function Prototypes
*/
void free_words(void);
void swap_pointers(long first);

/*
** Global Variable Definitions:
*/
char *words_to_sort[MAX_WORDS+1];

void main(void)
{
  int loop;
  char work_string[512];
  long words_entered = 0;
  BOOL flag;

  printf("Enter some names\n");

  for (loop = 0; loop < MAX_WORDS; loop++)
    {
    printf("Word %21d:", loop);
    gets(work_string);

    /*
    ** Allocate RAM for the string just
entered:
    */
    if (!(words_to_sort[loop] =
malloc(strlen(work_string) + 1)))
      {
      free_words();
      printf("Out of memory\n");
      return;
      }

    /* Copy our string across */
    strcpy(words_to_sort[loop], work_string);
    words_entered++;
    }

  words_to_sort[loop] = NULL;
/* Terminate our list of pointers */

  /*
  ** Now sort the strings into alphabetical
order
  */
  printf("\nSorting..\n");

  do
    {
    flag = FALSE;                          /* No
swaps this loop */

    for (loop = 0; loop < (words_entered - 1);
loop++)
      {
      if (strcmp(words_to_sort[loop],
words_to_sort[loop+1]) > 0)
        {
        /*
        **      We need to swap these two:
        */
        swap_pointers(loop);
        flag = TRUE;
        }
      }
    } while (flag == TRUE);   /* Keep going till
there are no more swaps */

    /*
    ** All done, list the results and exit
    */
  printf("\nSort complete, Results are:\n");

  loop = 0;

  while (words_to_sort[loop])
    printf("%21d. %s\n", loop,
words_to_sort[loop++]);

  free_words();

  printf("\nProgram Complete.\n");

  return;
}

/**********************
 *
 * Swaps two elements of the array of pointers
over.
 */

void swap_pointers(long first)
{
  char *temp;

  temp = words_to_sort[first];
  words_to_sort[first] =
words_to_sort[first+1];
  words_to_sort[first+1] = temp;

  return;
}

/**********************
 *
 * Free's the memory we allocated to store the
strings we are
 * sorting.
 */

void free_words(void)
{
  int loop = 0;

  while (words_to_sort[loop])
    free(words_to_sort[loop++]);

  return;
}
```

detect a failed library anyway, but more importantly, a few lines down where we could potentially use dos library calls, **DosBase** is now zero. And the worst thing is that C compilers won't spot this bug for you, because although it's wrong, it's perfectly legal C. This is a *very* easy trap to fall into.

Back to the subject in hand. When the sorting is complete, we show the results on screen in a list form in their new alphabetical order. Then, after freeing the memory used by the strings which were sorted, the program exits.

Sort algorithms like this are very useful for a variety of applications. We have given an example of sorting a list of words into alphabetical order. You could just as easily modify the listing to sort numbers by using a direct numerical comparison rather than calling the **strcmp()** function. A possible usage might be for showing a list of exam results in order of performance. A list could be compiled of marks for each person, and that list then sorted into order and the results shown. Bubble sorting is a particularly easy method of sorting a list but, as we've mentioned earlier in this article, there are other methods of searching that are far more efficient.

The Shell Sort, for example, was invented back in 1959, amazingly, by a Mr D Shell. You can see that one of the problems with the bubble sort is that if something from the very bottom needs to be at the top, a lot of swapping and loops are required to do this. Shell sorting works by comparing the far apart elements in the early stages of the sorting process, eliminating large amounts of disorder. The gap between the elements compared is reduced slowly until it becomes 1, at which point the sort works pretty much like a bubble sort. It's quite easy to change the existing program to implement this method:

```
char *temp;
int loop;
int space, check, swap;

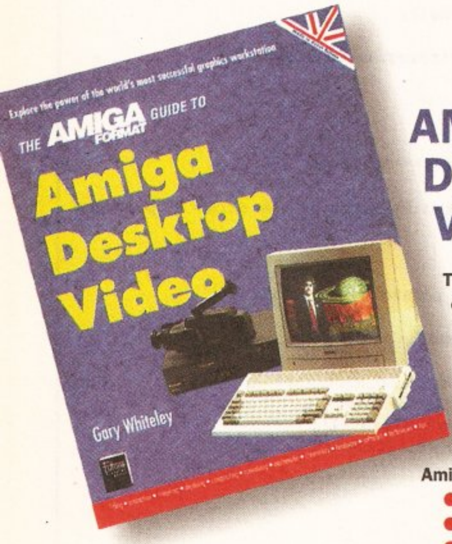
/* Outer loop to move gap closer together */
for (space = words_entered / 2; space > 0;
space = space / 2)
  {
  for (check = space; check < words_entered;
check++)
    {
    for (swap = check - space; swap >= 0 &&
(strcmp(words_to_sort[swap], words_to_sort[swap
+ space]) > 0); swap = swap - space)
      {
      temp = words_to_sort[swap];
      words_to_sort[swap] =
words_to_sort[swap + space];
      words_to_sort[swap + space] = temp;
      }
    }
  }
```

Some extra **{}**s have been put in for the first two **for** loops to make it easier to understand. To insert this new Shell Sort into the existing program, remove the old bubble sort loop, insert the code above, and add the three initial variable declarations straight after the **void main(void)** line, along with the other declarations. A close look at this, armed with the above description, should make it quite easy to figure out. We start with a gap of half the number of words we have to sort. The outer **for** loop will half this every time until it becomes zero. The next loop will go through all the entries from the current value of **space** to the end of the list. The final inner loop then checks every item that is **space** elements away from where we are at the moment.

Another sorting algorithm, called QuickSort, which was invented in 1962 (not by a Mr QuickSort though) is far more complex, and utilises recursion, a process where a function repeatedly calls itself in order to arrive at the required result. One of the things with recursion is if you get it wrong, your program can go wildly out of control, normally because of a stack over-run. We'll look into recursion as a programming method in a later episode of the C Programming articles. In the meanwhile, it's worth experimenting with the above two sorting methods, and trying to make them work with numbers as well as strings. For those of you interested in further experimentation, there is an ANSI C function called **qsort** which does a QuickSort. It can be quite tough to set up, but it's certainly rather fast.

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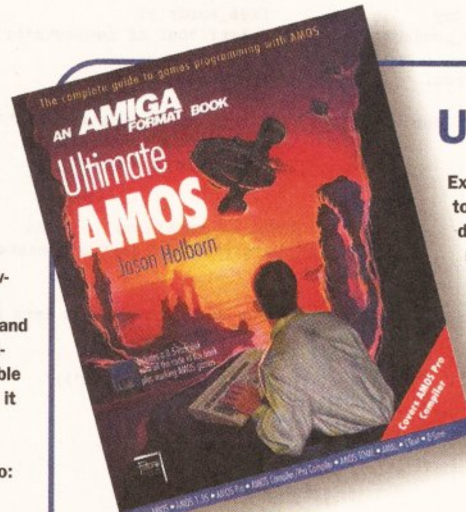
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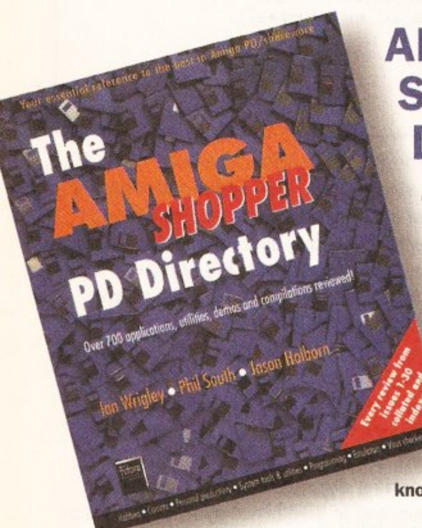
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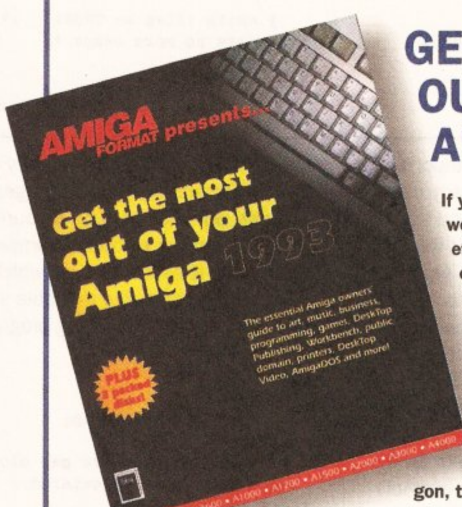
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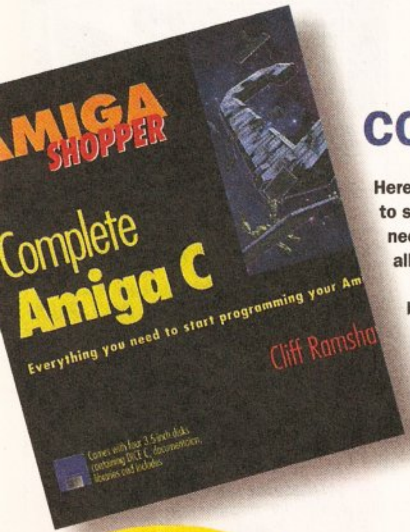
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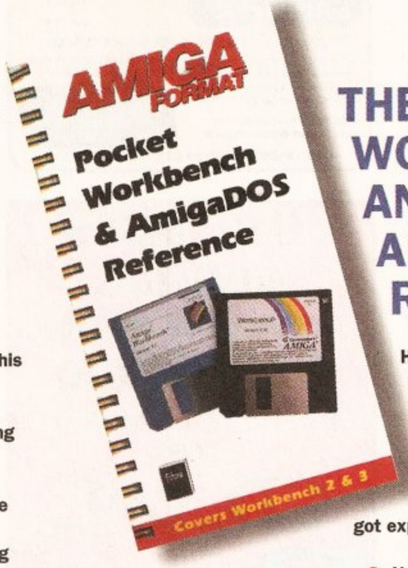
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SOFTWARE for free

Commercial applications can dig a deep hole in your pocket. Why not have a look at Graeme Sandiford's PD assortment first?

Salutations and welcome to another exciting trip to the land where software is free and the roads are paved with floppy disks. This month we have a large selection of useful business orientated programs. They should suit anyone who owns a small business, or just has a lot of information and, if they're lucky, money to keep track of.

SCRIBBLE OFFICE II

Scribble PD (U299A/B)

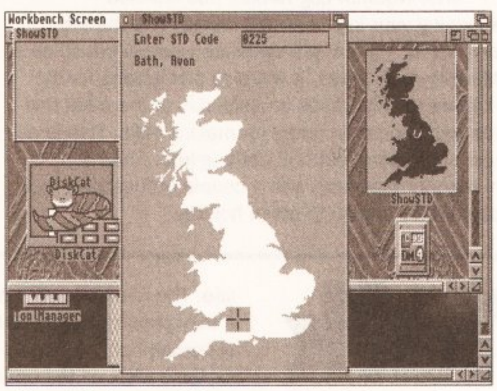
This compilation is aimed at the small business owner, and while it may not completely automate the running of your office, it will certainly make it run a lot easier. Many of the programs on these two disks take care of the more mundane tasks involved in the day-to-day running of a business. They will also help in keeping your records secure and accessible.

One of the most time-saving of the utilities is *DiskCat 2.1*. It's a disk cataloguer, which means it makes a file that contains a complete list of all of the files on each disk of your software collection. To do this by other means would mean you would need to manually list each file from the root directory onward, entering each directory and sub-directory in turn. This is very time-consuming if you have a large collection! As well as saving time when listing your disks' directories, *DiskCat* will help you track down files or programs with its search facility.

To add a disk to your catalogue is simply a matter of inserting the disk in the specified drive; the program will then search through the disk's contents. On finding a file you are given the opportunity to add a comment – useful for programs and files with non-descriptive names. Once the disk has been scanned you can sort the files by name, date, size or disk. The information can then be saved in the program's own format, or exported for use with other database programs.

Worms is a relatively simple screen-saver. Several small worm-like lines wiggle their way around your screen, leaving a trail that eventually fills your screen. Not particularly entertaining, but it does its job.

Show STD is a useful program. If you have an STD code, but are not sure which city it's for, you can enter the code and the program will give you the name of the city. Its position will also be indicated on a map of England, Scotland and Wales.



ShowSTD is a useful program that helps you to find the location of a town simply by entering its STD code. It will point out precisely where it is positioned on a large map of Britain.

If, like me, you are quite absent-minded you'll no doubt welcome the inclusion of *NoteIt!* in this collection. In short, *NoteIt!* acts like an electronic version of a Post-It pad. You, or someone else, can leave short notes as reminders of things you have to do, or people you need to contact. This can be a real life-saver in a busy office!

Before you ask, *DiskMate 4.0* has absolutely nothing to do with yeast extract of any description. In fact, while it may not taste particularly good on toast, it should make a number of things easy to do. Among its functions are: checking floppy disks, disk installing, multi-drive erasing and formatting, multi-drive diskcopying of DOS and non-DOS disks and crunching disks using DMS. You may have noticed that some of these functions are accessible from AmigaDOS. But this is also true of many operating system tools. The main purpose of these programs is to give the user the features of AmigaDOS with an easy-to-use interface. *DiskMate* does this very well, and being able to use DMS in this manner is extremely useful.

If you have a large number of shares, you're probably aware of how difficult it is to keep track of how they are doing. *Share-Manager V2.3* is a shareware portfolio manager. You can use it to keep track of the status of up to 200 different shares. However, it does have a more serious limitation – the program can't keep records beyond the paltry value of $10,000,000! Despite this pitiful limit, it's a very good program and for $10, (Australian dollars) it makes good financial sense.

Version 4 of *TextEngine* is also worth a look at. It's one of the more popular shareware (£5 registration fee) word processors. Since version 3.41 several new features have been added. You can now have an interlaced screen mode, save the current file without having to go through several requesters, import ASCII files directly,and print up to 99 copies of a document. A 36,000-word spelling checker is included, the program's memory management has also been improved, and the ASCII save bug has been fixed.

The collection also includes *LettaList* – for writing short letters and lists, *Browser* – another file utility, *AmigaDiary* – a diary, *Spread* – a spreadsheet and a demo of *Payadvice II*. All in all this is an excellent collection that just might make your life a lot easier.

Product Rating 86%

VIEWTOOLS

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Paul Compton has written an interesting mixture of

BEGINNERS START HERE

With so many different types of software available form PD libraries, it's all easy to become confused. Here are some explanations.

● PD stands for Public Domain. It's the most widely available kind of software discussed in this section of the magazine. It's basically free, the only condition is that the program and associated files are unaltered. You should only expect to pay a nominal fee for disk duplication and postage.

● Shareware should be of commercial quality – it gives users the chance to try before they buy. Often the shareware version of a program is limited with a few functions disabled. When the user is happy the program is suited to his needs, he can register and then receive the full version.

● Licenseware is of higher quality than PD but is on the other hand cheaper than registered shareware. There is no registration fee to be paid, but the author will receive a royalty payment.

● Freeware is free. In essence it is pretty much the same as PD but you can do with it as you will. Again, only a small nominal fee can be charged. You may well be wondering: "If I find a useful program in the Public Domain can I make a copy for my best mate, without getting busted by FAST?" The answer, on the whole, is yes. But you definitely can't distribute registered shareware or licenseware.

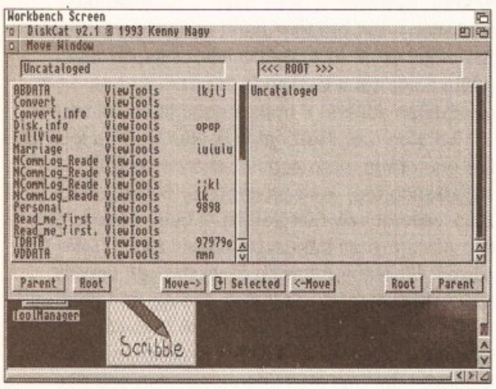
● As in the rest of the magazine, we give PD products a percentage rating. Anything that receives a rating of 80 per cent, or more, is well worth taking a look at – it could save you spending a fortune on commercial packages. If it gets more than 85 per cent then it should be added to your collection at the earliest opportunity. Disk compilations are given a Product Rating, as they are valued collectively. Individual programs are given a Program Rating.

utilities for this disk, although some perform more or less the same function as those found on the *Scribble Office II* disks (reviewed above).

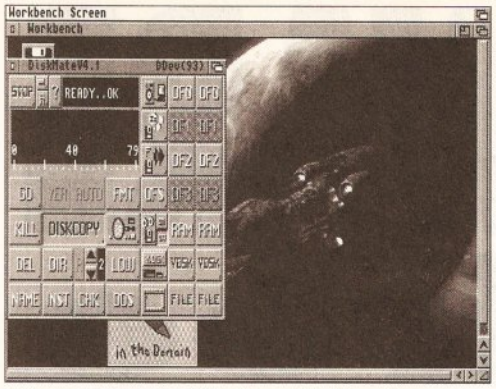
Viewdisk is another disk cataloguing program, like *DiskCat*, that has a handy file searching facility. You just need to pop in a floppy disk, and then select the files you wish to include in your records. Once you have stored your directory listings, you can search through to find the contents that you specify. You also have the option of outputting to a printer instead of the screen. You can print out disk labels as well. This is a very good program, but it does lack *DiskCat's* flexibility.

ViewPhone is a phone book with a difference. It has a very useful STD search function in particular. Unlike *ShowSTD*, you can choose to either input the town's name or an STD. This function can be particularly useful if you are preparing a mailshot, as is the printing facility that will print a single address or a run of several.

If you are trying to trace your roots, or provide future generations with information about yourself, including pictures, you'll definitely find *ViewTree* of interest. It has a comprehensive selection of fields for entering information such as names, date of birth and death, place of birth and death and the record number of the individual's parents. This last field can help immensely when trying to trace a



Even the largest of disk collections can be quickly catalogued using DiskCat. It will automatically create a directory listing of each disk.



If you can do something from Workbench, you can certainly do it more easily with Diskmate and most probably much better.

family line, as you don't have to produce a whole family chart in order to locate an individual's parents or grandparents. While it may not be the best product of its kind, it is certainly a worthwhile addition to this compilation.

While exploring the PD-rich world of comms may be a good way of finding new software, it can be very difficult to keep track of your calls. If you are a user of *NComm* help is at hand or, to be precise, on this disk. *NComm Log Reader* will, not surprisingly, read your *NComm* Log files. Every time you use *NComm* to log on to a BBS, or to e-mail a friend, it records both the numbers you have called and the period of time you were on-line. *NComm Log Reader* uses the information contained within this file to create an approximation of what your modem-related telephone bill will be. As the information includes the phone number you can figure out who has made what call.

After *NComm Log Reader* has finished scanning your log file, it will display information about your log and will calculate your bill based on Mercury or BT rates. It will also plot graphs for the number of calls made on each day of the week and the most common times for making calls. This is a useful program, but it is not bug-free. I had a number of problems with a couple of functions that caused my A4000 to crash horribly.

One of the things that continually fascinated me as a child was the conversion between different measuring units and the formulae behind it. Don't ask me why, I've no idea. I still enjoy playing with conversion programs, even though I'm *almost* grown-up. *Convert* is one of the most comprehensive conversion programs I've encountered; it kept me playing around for some time in the office.

Convert can handle a wide variety of types of measurement including thermal conductivity, angles, density, force, heat flux, mass, pressure, viscosity and many others. As with *NComm Log Reader*, *Convert* is not perfect and I had a great amount of difficulty in getting the mouse-pointer to appear. However, this is not as big a problem as it might seem as *Convert* has keyboard-shortcuts for most of its functions (except Money).

All in all, this is pretty good collection of utilities and although none of the programs are particularly stunning, they do perform useful and sometimes essential tasks.

Product rating 70%

AZSPELL V2.01

17 Bit Software (Disk No. 2886)

AZSpell has long been a popular and very good PD dictionary – so good that we gave you the chance to see for yourself on our May coverdisk last year. This latest version has had several errors removed and now claims to be the most accurate of freely-distributable dictionaries. It has a respectable number of entries, 22,346 words, and has been speeded up noticeably.

The way *AZSpell* works is very simple; it will also work in conjunction with any word processor. On running the program, the first thing you must do is select the document you wish to spell-check. *AZSpell* will then use its 22,346-word dictionary to check the spelling of the selected document. It will check for unique words and then take you through each one, providing a selection of spelling suggestions.

You can then select a word from the list to replace an incorrectly spelt one, or skip a correct word that is not contained in the dictionary. You

Terminal Talk

The end of the line in the search for the perfect comms package? Dave Winder investigates.

Way back, there was only one comms package known as being the bees knees, namely *JR-Comm*. Over the years *JR-Comm* slowly but surely got overtaken, in particular by *NComm* and *Term*, and for a couple of years now hasn't even been a contender, let alone reigning champ. However, *JR-Comm's* creator, John P Radigan, has been working hard on a successor, and now it's here – *Terminus*.

Installing *Terminus* is simplicity itself, thanks to its use of Commodore's Installer utility. Early versions did a nasty thing, in my opinion, and stored the modem configuration in the modem's RAM. This caused problems for people who use their modems with a number of different packages and have the expertise and experience to optimise the modem settings themselves. In response to the complaints generated by this feature, the author made the modem configuration an optional feature. This means that the complete novice can still let *Terminus* optimise the modem, whilst the experienced users can choose to do it themselves.

Once installed and configured, the program is simplicity itself to use. The manual, which prints out to a truly papermungous 216 pages, is extremely comprehensive and explains what all the options are. However, the manual is so full of information that finding the parts that you need can be a bit of a problem.

ALL IN THE SCRIPT

The first feature that really catches the eye of this old hand is the Script Recorder. Scripts are supported, in one way or another, by all comms packages. They can be used to automate most procedures, such as dialling a BBS, logging on with your password, checking for new mail and then downloading to your hard disk. The problem with scripts is that they can be difficult to write, even more so if you are not a programmer or are a total beginner to comms itself. The Terminus Script Recorder solves this problem by allowing the user to automatically record data received from a BBS and your responses to that data. This means that the logging on to a BBS and downloading messages could be recorded as a script just by dialling the BBS number and starting the Script Recorder function, then logging in as normal and collecting your awaiting mail and initiating a download. *Terminus* ensures that this information complies with a set of rules and then creates a script using its comprehensive script language. If you prefer to write your own scripts you can use the built in script language, or you could take advantage of *Terminus'* ARexx support.

Another feature of *Terminus* I liked is the multitasking windowed review buffer, complete with excellent fast text searching capabilities. The size of the buffer is configurable, and it has integrated clipboard support as well. This can be most useful for reading long messages and text files off-line without the need to download them. Just log on, go through the messages, then log off. Once

PUBLIC PERSONALITY

Continuing our series of profiles of PD houses, we spoke to Linda of Deltrax PD. Deltrax was started over two years ago and now has a library of 3,500 to 4,000 disks. They cover a wide variety of software, with applications that cater for most Amiga uses. They also stock a number of Central Licenseware titles.

Why did you decide to start a PD library?
Simply because we used a lot of PD and realised that it was something we could do ourselves.

Do you find that running a library takes a toll on your family life?
Yes, it does creep into your social life and tends to take over a bit. We have to be very strict about keeping hours, otherwise there is so much to do in the library you would just go on and on.

Do you specialise in any particular kind of PD?
No, we try to keep up with all types of PD.

What do you think is the best part about running a PD library?
The satisfaction of running your own business. PD is relatively easy to get hold of, and then there's the convenience of working from home.

Do you get many programs sent in by software authors themselves?
Yes, we view them ourselves and if they are good enough we include them in our listings.

What aspects of running a PD library do you find the most difficult?
Keeping up with the constantly-changing Amiga scene. With all of the versions of Amigas, it takes a great deal of time to check that programs are compatible.

What do you think of the current Amiga PD scene? Do you think it has improved over the last two years?
I think it has gotten a lot better. It gives the average computer-user a good choice of inexpensive software that is just as good commercial software.

You can contact Deltrax on ☎ 0492 515981, or write to them at, 36 Bodelwyddan Ave, Old Colwyn, Clwyd LL29 9NP.

also have the time-saving option of adding your own words to the dictionary. This will help in avoiding tediously repetitive queries about perfectly correctly spelt words.

There is another useful program included with *AZSpell*: *AZMerge*. This program can be used, after checking a document, to make new additions that you have made with the current document permanent. It does this by merging the main dictionary with a file called AZupdate. This file is created automatically by *AZSpell* if you have added any new words while checking a document. This is a great safety buffer if you have accidentally added misspelt words, as in effect you have to enter them twice. *AZMerge* can also be used in another useful way – you can create a list of words in your favourite text-editor, one word per line, and then save it as AZupdate. You can then merge it with the main dictionary.

In summary, *AZPSpell* is a fantastic program that has just been made *even* better, and if your word processor is lacking a spelling-checker you would be well advised to get hold of a copy of *AZSpell* as soon as you possibly can.

Program rating 86%

MAGICWB EXTRAS

KEW=II Software

One of the first things most AGA-machine owners do when they get their hands on their new Amiga is edit the Workbench backdrop pattern. This is an easy process – you only have to open the Prefs drawer and double-click on the WBpattern icon. It's truly amazing how such a simple act can bring about so much bad taste!

MagicWB helps to ease the eye-strain, as it has several good backdrops and a bunch of great icons. The *MagicWB Extras* disk reviewed here contains ten new patterns and several new icons.

The patterns will be automatically tiled until they fill a directory or Workbench window. There is a variety of backdrops, ranging from simple patterns to quite complicated images. But they are all very attractive and, more importantly, subtle.

The icons cover the majority of programs, commodities, etc found in Workbench 3.0. They also include new icons for other common PD and commercial packages, as well as some Workbench games. Even if they don't cover some of your programs, you can just change the names of icons for similar programs to match the ones you have.

It is a very good collection and, while I would recommend it wholeheartedly, I would ask that if you have a friend who would benefit from this collection, please be subtle. It's a bit like telling a friend that he's got acne; leave a copy of the program in a discreet location, or mention casually how nice the collection is.

Product rating 70%

WORDS4 PRO

Amiganuts

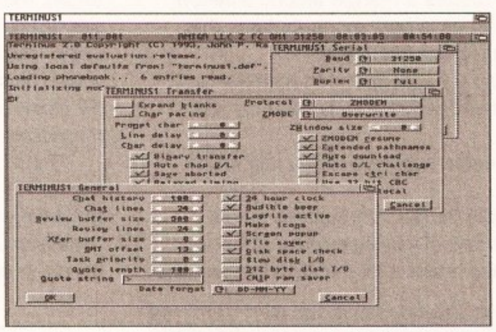
There are two kinds of people: those who diligently plough through word puzzles until they find the solution, or pass out due to lack of food; and those who leap for the nearest dictionary if the required word is over five letters long. These two types often describe each other as either weak-minded slackers or, if they fit into the second category,

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disconnected use the review buffer to actually read the text, using the search facility to quickly locate areas of interest.

THE DATA GAME

One of the things that made *JR-Comm* such a ground breaking program was its extensive file transfer protocol implementation. These days *ZModem* has just about taken over, and nearly all online services will support it. For this reason, there isn't the same necessity for multitudes of protocols, however it is always nice to be prepared for any eventuality. Radigan's program supports *ZModem*, and the implementation is very good indeed, along with the various varieties of both *XModem* and *YModem*. However, *CIS B+* is available only as an external *XPR module*. Considering the popularity of *CompuServe*, I found this quite a surprising omission.



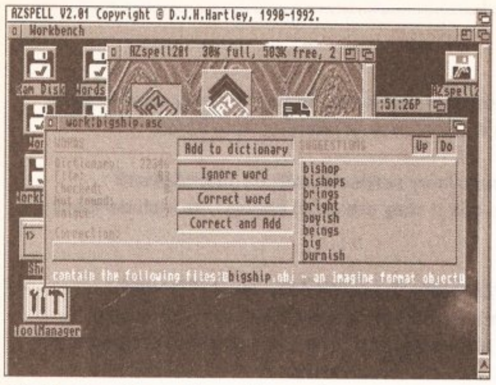
Terminus' file transfer requester is similar to that used by the Term comms package.

The file transfer status requester is similar to that used by the *Term* comms package, and this is no bad thing. It gives all the information that is useful during file transfers, such as details of any errors, actual transfer rates, and details of the file/s concerned. There is also the by now obligatory bargraph to give a graphical display of the percentage of the file transferred.

Terminal emulation is pretty thorough, including TTY, Amiga, IBM ANSI, VT-52, VT-102, VT-220. However, like so many of the comms packages around, *Terminus* doesn't support VT-100. Now this really is a crying shame as this emulation is a very useful one indeed. There are a possible maximum of 40 function key macros available, the first ten assigned to the F1 to F10 keys, the remainder using these keys with the Shift, Alt, and Ctrl keys as qualifiers. Macro keys are essential for all us lazy bunnies out there.

CONCLUSION

There are a number of comms packages available today, so for *Terminus* to cut itself a slice of this market it would need to be something very special indeed. Now, whilst I really do like the Script Recorder function, and the review buffer is very nicely implemented, I can't really say that it justifies the $40 US price tag ($10 US if you are a registered *JR-Comm* user). Whilst this sum of money is very reasonable for the sort of program *Terminus* is, the fact is that there are other comms programs out there which are just as efficient yet cost a great deal less. In particular *Term*, which is *giftware*, requiring you only to send a gift to the author. *Term* also gets updated very regularly indeed, and has good European support whereas *Terminus* is a USA orientated support system. Actually, to be fair to *Terminus* there is a dedicated support BBS (based in the US) which is part of Fidonet. If *Terminus* had appeared in the marketplace a couple of years ago, I would use it now. *Term* got there first, and I have to admit I switched back to using it when this review was completed. AS



Don't worry if your favourite wordprocessor doesn't have a spelling checker, AZSpell checks your documents with its 22,000+ dictionary.

they call the others self-righteous schmucks.

If, like me, you are in the second section of humanity, you'll find that with *Words4 Pro* you may not need to walk any further than to your Amiga's resting place to find the answers to those stubborn crosswords and perplexing conundrums. *Words4 Pro* is extremely easy to use. It has three modes of operation – you can search for a Match, Anagram or Build All.

Match works in the following way. You enter a pattern, for example "w sh", and the program will attempt to fill in the missing letters. It will then produce a list of words that match the pattern – for the example above, words such as wish and wash.

The Anagram search criteria would produce the following words from the example input, show, shaw, hews, wash and wish.

Build All would produce a substantially larger list, as its search criteria would include words with any number of letters up to the same as the inputted pattern.

However, in practice *Words4 Pro* never found the word wish, regardless of which search method was employed. This may be because the version reviewed is only the PD version. The full version, which costs £10, has a 100,000-word glossary, which can be edited by the user. The PD, or should I call it shareware, version will give you an idea of how the full program works. It is easy to use, but it's a shame the PD glossary is not larger.

Program rating 65%

WORD FINDER PRO

Virus Free PD

If you are still having difficulty solving your crosswords or anagrams after trying *Words4 Pro* you might consider giving *Word Finder Pro* a chance at solving those tricky word puzzles.

The two programs work in pretty much the same way, although the version of *Word Finder Pro* on test is a licensed product that is only available from Virus Free PD for £5. Despite working in the same fashion (inputting the letters you have found so far of a word, or performing a search for answers to anagrams, as well as searching for any words that contain the same letters), *Word Finder Pro* has a more cheerful interface.

As a result, it is more pleasant to use. Its bright yellow colours and amusing sound effects can sometimes be a welcome change from staring at black and white print. It also managed to find the word wish from the input "w sh", something *Words4 Pro* was unable to do. The program's dictionary (or glossary) even included the word electroencephalography which, according to Webster's Dictionary of the English Language, is the recording of brain waves – impressive, eh? As with *Words4 Pro*, you can also add new words to the program's glossary. You can also print out the list of words the program finds, or scroll through them on screen using the cursor keys. If you wish to repeat the last entry you inputted, you can just push the up cursor key, just like in AmigaDOS. I must say I prefer *Word Finder Pro*, with its polished appearance and 58,000-word glossary, even though it costs more than the PD version of *Words4 Pro*.

Program rating 78%

ART SCHOOL

F1 Licenseware, (£3.99)

If there was an Oscar for the most funky and original paint package, I am sure *Art School* would receive a nomination. It has a selection of some of the most bizarre and fun tools I've ever seen. The Wacky Worm effect is particularly... wacky. Although you are unlikely to create any masterpieces, you will be surprised at how easy it is to create decent images.

You would be forgiven for thinking that *Art School* is intended for use by children because of its name. In fact it claims to be equally useful for adults. With its large icons and simple interface, it is certainly easy enough for a child to use effectively. Whether or not it could be used to produce top-quality artwork is doubtful.

The program has many of the features you would expect from a paint package, such as a pen tool, line tool, squares and circles, brushes, fills and a straight line tool. Although it lacks some basic tools, such as Bezier curves, it does have a large selection of more eccentric tools.

Growing circle is an interesting effect; it draws a series of growing circles at your mouse's current position. So, if you keep your mouse still, you'll have several circles radiating from the same centre. If on the other hand you move your mouse around the screen, you can create a tunnel effect. Growing squares does exactly the same, but with squares instead of circles.

Wacky worm is a strange one. Several small circles follow your pointer around the screen at different speeds, a bit like some sad 70's pop video.

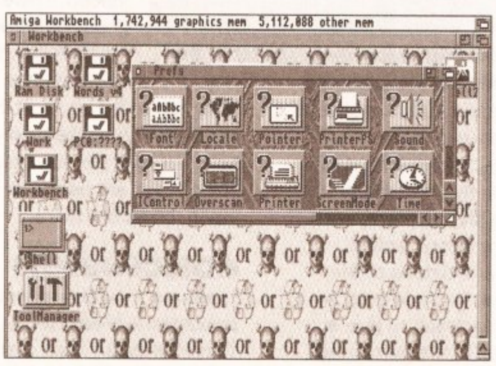
Tri-spinner rotates a triangle around a central point until you let go of your mouse-button. This produces a spira-graph type effect.

There is also a fractal tree that appears to grow in size for the period of time you hold your mouse-button.

3D floor creates a grid which you can rotate horizontally.

Both Random Circles and Squares create squares and circles of varying colours and sizes.

Weather Map draws a map of Britain – just like a weather map (without Mr Michael Fish, thank goodness).



Thanks to MagicWb, you don't need to bring your darkest sunglasses when visiting friends with bad taste in Desktop backdrops.

There is also a useful child-lock feature. This stops the program from repeating the last pasting of a brush or effect you used when holding your mouse-button down.

There are loads of other features available, although many of them involve pre-saved brushes or backdrops to achieve their effects. All of this may sound too good to be true. In fact it is – while its effects are impressive the program has quite a few bugs, usually involving the Amiga seizing up for indefinite periods of time. The program is not really suited for creating serious artwork, and will never challenge commercial packages. Having said that, it only costs £3.99. Compared with an art package like *Brilliance*, which can be found selling for nearly £200, it does beat it in terms of value for money.

Program rating 82%

IFF VECTOR BALL DESIGNER

Central Licenseware

If you viewed any number of demos, you've probably sat through enough vector ball sequences to last a lifetime. If you haven't, you may find the *Vector Ball Designer* of interest. You can use this program to produce sequences of your very own.

The program's interface follows the tri-view approach, taken by most 3D packages such as *Imagine*. The first thing you need to do is select your ball from six preset sizes and three user-definable colours. You need to define the ball's shading colour, as well as the base colour, but the highlight colour can only be white.

To alter the colours you can simply move RGB sliders until you get the colours you want. Once you are happy with the ball's appearance, you can select the size of ball you want and it will appear in all three windows. You can add up to a maximum of 99 balls. Once you have added a ball to the screen, you can plot its future position. It's a shame that you can't re-select the balls; if you find you've made a mistake earlier on, after adding 50 or so balls, you can't re-adjust a ball's position.

Once you've chosen the colours and described their movement, you can then animate the balls. All you need to do is specify the number of frames (up to 32), the light direction, choose either a straight view (head-on), or an isometric view (at a slight angle) and then render your masterpiece. When you've finished, the sequence can be saved as an IFF animation file, ready for inclusion in your latest megademo or animation extravaganza.

The program is rather limited in its effects. For example, the balls don't cast shadows and there is very little control over their movements. However, it is easy to use and the results are okay, if a little simple in appearance.

Program rating 63% AS

UK PD HOUSES • UK PD HOUSES

A1200 Only PD. Contact B J Cowdall, 27 Pheasant Way, Cirencester, Glos. GL7 1BJ.

AGA Exchange, 18 Brownshill, Cromer, Norfolk NR27 0QA. Ads free. Membership fee £9.

Amicom PD, 22 Church View Close, Havercroft, Wakefield WF4 2PH.

AMOS PD, 1 Penmynydd Road, Penlan, Swansea SA5 7EH.

Amigaholics, Kevin Bryan, 49 Coutts House, Charlton Church Lane, Charlton, London SE7 7AS.

Amiganuts United, 1 Daffern Avenue, New Arley, Coventry CV7 8GR.

Amiga Productivity PD Series, 51 Ennors Road, Newquay, Cornwall TR7 1RB. Contact M J Docking.

Anglia PDL, 30 Victoria Street, Felixstowe, Suffolk, IP11 7EW. ☎ 0394 283494.

Anim1 PD, 2 Fatherwell Avenue, West Malling, Kent ME19 6NG.

Armchair PD, 180 Blackton Close, Newton Aycliffe, Co Durham DL5 7EY.

Artman, 40 Northwell Gate, Otley, West Yorkshire LS21 2DN. ☎ 0943 466476.

Asgard PD, 20 Langdale Drive, Flanshaw, Wakefield WF2 9EW. ☎ 0924 363059.

Batty's PD. Contact Ian or Lynn Battison, 7 Denmark Road, Northampton NN1 5QR. ☎ 0604 22456. Life membership £3.99.

Beats Brothers, 6 Brownings Close, Pennington, Lymington, Hampshire SO41 8GX.

Belshaws PD. 55 Baldertongate, Newark, Notts. NG24 1EU. ☎ 0636 72503.

BG PD, 6 Peter Street, Whitehaven, Cumbria CA28 7QB.

Blitter, 213 Fordfield Road, Sunderland SR4 0HF.

Blitterchips, Cliffe House, Primrose Street, Keighley, BD21 4NN. ☎ 0535 667469.

BTK, 7 Callander Road, Catford, London SE6 2QA. ☎ 081 473 1650.

Bus Stop PD. Contact Lisa or Cheryl, 6 Smiths Avenue, Marsh, Huddersfield HD3 4AN. ☎ 0484 516941.

C and C PD. Contact Chris Wildman, 3a The Cedars, Tilehurst, Reading, Berks. RG3 6JW. ☎ 0734 411131.

Chris's PD, 22 Merryfields Avenue, Hockley, Essex SS5 5AL.

Colwyn PD. Free, non-profit-making PD, membership £5 per year. Contact Andy Roberts, 17 Gladys Grove, Colwyn Bay, Clwyd LL29 7YB. ☎ 0492 533442.

Compo Software, 36 Priory Rd, Fareham, Hants, PO15 5HT

Computer & Design Services, 24 Blackmoor Croft, Tile Cross, Birmingham B33 0PE. ☎ 021 779 6368

CP PD, (in association with NFA Productions) 3 Dunedin Crescent, Winshill, Burton on Trent, Staffs. DE15 0EJ. ☎ 0283 516736.

Crazy Joe's, 145 Effingham Street, Rotherham, South Yorks, S65 1BL. ☎ 0709 829286.

Deja Vu, 7 Hollinbrook, Beech Hill, Wigan WN6 7SG. ☎ 0942 495261.

Deltrax PD, 36 Bodelwyddan Ave, Old Colwyn, Clwyd LL29 9NP ☎ 0492 515981

Diskovery PD, 108 The Avenue, Clayton, Bradford, West Yorkshire BD14 6SJ. ☎ 0274 880066.

Essex Computer Systems, 118 Middle Crockerford, Basildon, Essex, SS16 4JA. ☎ 0268 553963.

Eurodisk PD, PO Box 2, Radlett, Herts WD7 8QL.

Express PD, 47 Aberdale Road, West Knighton, Leicester LE2 6GD. ☎ 0533 887061.

Five Star PD, 48 Nemesia Road, Amington, Camworth B77 4EL. ☎ 0827 68496.

GVB PD, 43 Badger Close, Maidenhead, Berks. SL6 2TE. ☎ 0831 649386.

Haven Computing, 15b Meeching Road,Newhaven East Sussex BN9 9RL. ☎ 0273 513491

Highland PD. Free list contains lots of education and business disks. Contact David Paulin, 1 Whinpark, Muirtown, Inverness IU3 6NQ. ☎ 0463 242431.

Holmes Brothers Compilations. Contact Craig for monthly compilation disk. 23 Rocester Avenue, Wednesfield, Wolverhampton, West Midlands WV11 3AU. ☎ 0902 733418.

Hornesoft PD. Contact Chris Horne, 23 Stanwell Close, Wincobank, Sheffield S9 1PZ. ☎ 0742 422000.

ICPUG (Independent Commodore Product Users Group), PO Box 1309, London, N3 2UT. ☎ 081 346 0050.

Immediate Arts, 26 Lyndhurst Gardens, Glasgow G20 6QY. ☎ 041 946 5798.

Judge Dredd's PD, 1 Nottingham Road, South Croydon, Surrey CR2 6LN.

Kew=II Collection, PO Box 672, South Croydon, Surrey CR2 9YS. ☎ 081 657 1617.

KT's PD. 75 The Drive, Rochford, Essex SS4 1QQ. ☎ 0702 542536.

Langham PD. Contact Richard Payne, 89 Wolverhampton Road, Codsall, Wolverhampton WV8 1PL

Logic PD, 8/5 Glenalmond Court, Sighthill, Edinburgh EH11 4BE.

Magnetic Fields, PO Box 118, Preston, Lancashire PR2 2AW. ☎ 0772 881190

MegaSoft, 78 Bockingham Green, Basildon, Essex SS13 1PF. ☎ 0268 559164

NBS, 1 Chain Lane, Newport, Isle Of Wight, PO30 5QA. ☎ 0983 529594.

Network PD & Shareware Library, Kenmare, Co. Kerry, Eire. ☎ 010 353 64 41603

***NJH Computers**, 12 Meesons Mead, Rochford, Essex SS4 1RN. ☎ 0702 546796.

Numero Uno, 21 Burstall Hill, Bridlington, N Humberside YO16 5NP. ☎ 0262 671125.

Orbital Software. Contact A Flowers, 37 The Orchard, Market Deeping, Peterborough, Cambs. PE8 8JR. ☎ 0778 342064.

Pathfinder PD, 41 Marion Street, Bingley, W Yorks. BD16 4NQ. ☎ 0274 565205.

Penguin Public Domain, PO Box 179, Reading, Berks RG3 3DD.

PD Soft, 1 Bryant Ave, Southend-on-Sea, Essex SS1 2YD. ☎ 0702 466933.

Phil's A1200 Only PD, Phillips Woods, 101 Grove Rd, Gosport, Hants PO12 4JJ.

Premier PD, 45 Fairfield Gardens, Eastwood, Leigh-on-Sea, Essex SS9 5SD. ☎ 0702 520520.

Riverdene PDL, 30a School Road, Tilehurst, Reading, Berkshire RG3 5AN. ☎ 0734 452416.

Roberta Smith DTP, 190 Falloden Way, Hampstead Garden Suburb, London NW11 6JE. ☎ 081 455 1626.

Scribble PD, 2 Hillside Cottages, Burstall, Suffolk IP8 3DY. ☎ 0473 652 588.

SeaSoft Computing, The Business Centre, 1st Floor, 80 Woodlands Avenue, Rustington, W. Sussex BN16 3EY. ☎ 0903 850378.

Sector 16, 160 Hollow Way, Cowley, Oxford. ☎ 0865 774472.

17-Bit Software, 1st Floor Offices, 2/8 Market Street, Wakefield, West Yorkshire WF1 1DH. ☎ 0924 366982.

Softville, 35 Market Parade, Havant, Hants PO9 1PY. ☎ 0705 498199.

Software Expressions, Unit 4, 44 Beauley Road, Southville, Bristol BS3 1PY. ☎ 0272 639593.

Startronics, 39 Lambton Rd, Chorlton, Manchester M21 0ZJ. ☎ 061 881 8994.

Tazmania PD, 4 Boultham Avenue, Lincoln LN5 7XZ. ☎ 0522 538706 (after 6 pm).

Telescan Computer Services, Handsworth Road, Blackpool FY5 1SB. ☎ 0253 22296.

Trevan Designs Ltd, PO Box 13, Aldershot, Hants. GU12 6YX. ☎ 0483 725905 (note: modem)

Vally PD, PO Box 15, Peterlee, Co Durham SR8 1NZ. ☎ 091 587 1195.

Virus Free PD, 31 Farringdon Road, Swindon, Wiltshire SN1 5AR. ☎ 0793 512321

Visage Computers PDL. 18 Station Road, Ilkeston, Derbyshire DE7 5LD. ☎ 0602 444501.

WMC (Worldwide Marketing Concepts), 5 Arthur Terrace, Penisarwaen, Gwynedd, LL55 3PN. ☎ 0286 871815.

Your Choice PD Library, 39 Lambton Road, Chorlton-cum-Hardy, Manchester M21 1ZJ. ☎ 061 881 8994.

- **Whenever you write to the libraries for a catalogue, include an SAE for its return.**
- **The libraries named in the reviews were the ones that provided us with the disks. Given that PD can be freely copied, the same programs may be available from several libraries.**

ATTENTION!

If you run a PD library not listed here, or want to amend any information, send full details and a copy of your latest catalogue to: **PD Directory, *Amiga Shopper*, 30 Monmouth Street, Bath, Avon BA1 2BW.**

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UTILITIES

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BBASE III V1.3 + Y
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DISK SALVAGE +Y
Correct disk errors etc
D-PAINT TUTOR + Y
ENGINEERS KIT + Y
Check out your system
HAM LAB PRO V2.0 + Y
Great graphics utility
INVOICE MAKER + Y
For the small business
JODY UTILITIES 1 + Y
Utilities collection
JODY UTILITIES 2 + Y
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MAGNETIC PAGES V1.3 + Y
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OCTAMED 2 + Y
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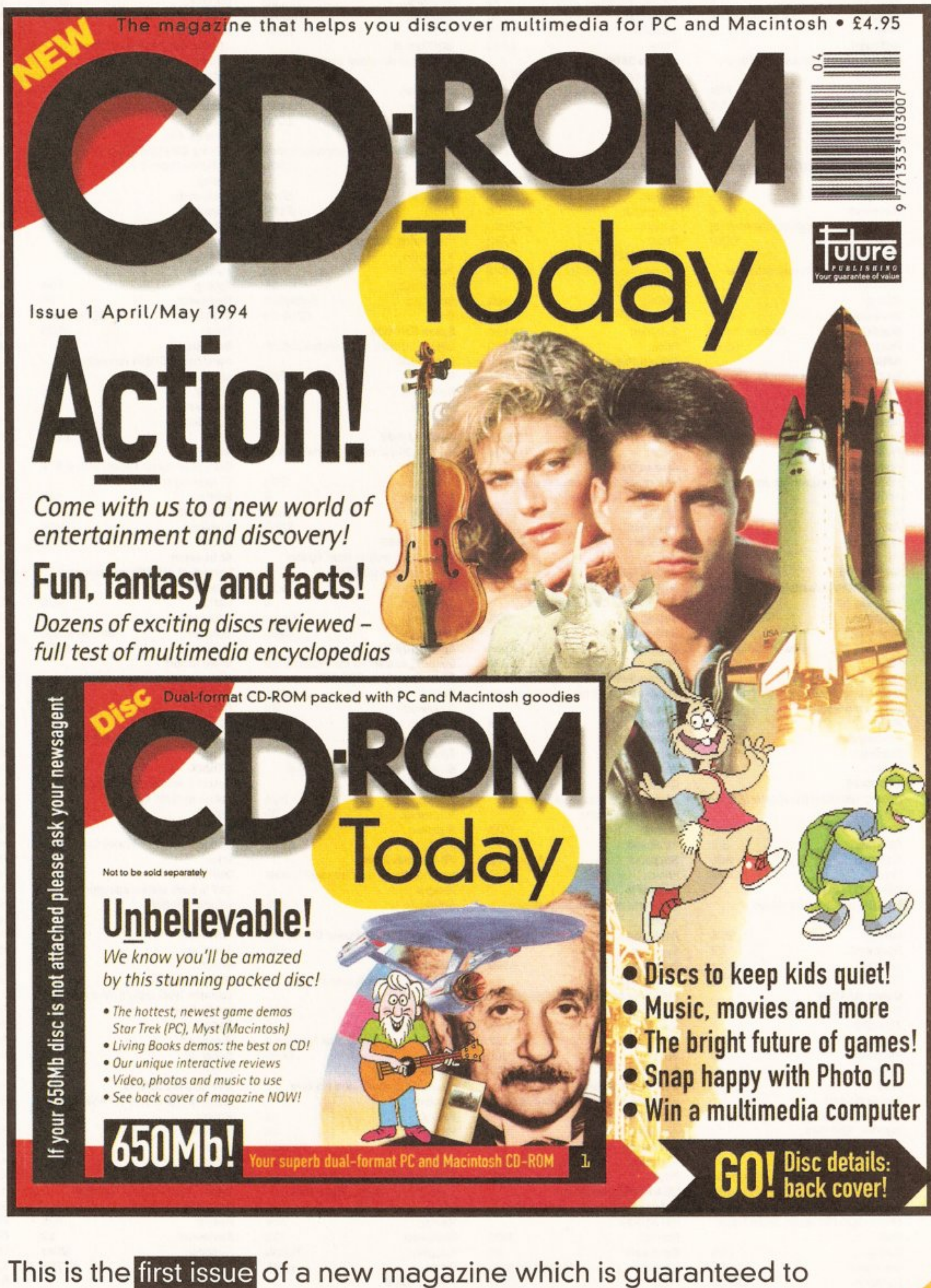
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Hardware

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External 8Mb RAM expansion for A500
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Reviewed: 5
Supplier: WTS Electronics
Price: £199

A1230
14MHz 68030 and 68882 accelerator for the A1200
Rating: [illegible]
Reviewed: 27
Supplier: Silica
Price: £299

A1500/B2000
Discontinued. Big-box version of A500/A500+
Rating:
Reviewed:
Supplier: Commodore
Price: £S/H500

A2630
25MHz 68030 and FPU accelerator for the A1500(+)
Rating: na
Reviewed: na
Supplier: Commodore
Price: £1200

A3000-16
Discontinued. 608030 16MHz very rare. ECS chip set + 2Mb
Rating: na
Reviewed: na
Supplier: Commodore
Price: £S/H900

A3001
50MHz 68030+FPU accelerator for the A1500(+)
Rating: 90%
Reviewed: 3,5
Supplier: Silica
Price: £1799

A4000-30
Stripped version of A4000
Rating: na
Reviewed: na
Supplier: Commodore
Price: £999

A4000-40
Flagship 25Mhz 68040/AGA Amiga
Rating: na
Reviewed: na
Supplier: Commodore
Price: £2000

A500
Early machine with 512K. Good S/H models rare.
Rating: na
Reviewed: na
Supplier: Commodore
Price: £120+ (used)

A500+
Early V2 machine with 1M RAM. Good value S/H.
Rating: na
Reviewed: na
Supplier: Commodore
Price: £140 (used)

A5000-16
16MHz 68020+FPU accelerator for the A500(+)
Rating: na%
Reviewed: 4
Supplier: ACL
Price: £189.99

A530
40MHz 68030+FPU accelerator for the A500(+)
Rating: 90%
Reviewed: 20
Supplier: Silica
Price: £800

A590
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Rating: 50%
Reviewed: 1,8,13
Supplier: Commodore
Price: £399

A600
The most basic Amiga currently available new
Rating: 80%
Reviewed: na
Supplier: Commodore
Price: £199

A8802SVHS
SVHS version of A8802 genlock with fade and dissolve
Rating: 50%
Reviewed: 10
Supplier: Marcam
Price: £499

AdRAM 2000
Internal RAM expansion for big box Amigas
Rating: 70%
Reviewed: 8
Supplier: Power Computing
Price: £179

AdSpeed
16MHz 68000 accelerator for the A500(+)
Rating: 70%
Reviewed: 3,5
Supplier: Silica
Price: £173

AEHD
One of the few high-density drives for the Amiga
Rating: 70%
Reviewed: 8
Supplier: Applied Engineering
Price: £140

Alphascan
Hand-held 400DPI monochrome scanner
Rating: 90%
Reviewed: 14,22
Supplier: Golden Image
Price: £199

AMAS 2
8-bit stereo sound sampler with volume control
Rating: na%
Reviewed: na
Supplier: MicroDeal
Price: £100

Amitek 600
Internal RAM expansion for the A600
Rating: 70%
Reviewed: 24
Supplier: Silica
Price: £45

Aries 2000
Internal RAM expansion for big box Amigas
Rating: 70%
Reviewed: 24
Supplier: Power Computing
Price: £129

Audio Engineer
8-bit stereo sound sampler with adjustable volume
Rating: 90%
Reviewed: 5
Supplier: Silica
Price: £199

B5000-25
25MHz 68030+FPU accelerator for the A500
Rating: 70%
Reviewed: 3,5
Supplier: ACL
Price: £479

Canon BJ-10ex
Reliable and popular ink-jet. 360DPI, 83 CPS
Rating: 90%
Reviewed: 22
Supplier: Canon
Price: £299

Canon BJ-10sx
Alternative BJ-10 ink-jet. 360DPI, 110 CPS
Rating: 70%
Reviewed: 29
Supplier: Canon
Price: £227

Canon BJ-300
Fast desktop ink-jet. Three fonts, 360DPI, 300 CPS.
Rating: 70%
Reviewed: 22
Supplier: Canon
Price: £495

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Rating: 70%
Reviewed: 22
Supplier: Canon
Price: £1175

CAX354
Stylistic external floppy disk for all Amigas
Rating: 70%
Reviewed: 0,2,8
Supplier: Cumana
Price: £75

CBM040
40MHz 68040+FPU accelerator for the A3000
Rating: 90%
Reviewed: 20
Supplier: Commodore
Price: £na

Cherry Mk4
High resolution 9' x 12' touch tablet
Rating: na
Reviewed: na
Supplier: Cherry
Price: £450

Citizen 240C
24-pin colour printer. 240 CPS and nine resident fonts
Rating: na
Reviewed: na
Supplier: Citizen
Price: £350

Citizen L24d
24-pin impact printer. 109 CPS
Rating: 70%
Reviewed: 4
Supplier: Citizen
Price: £292

Citizen M200
24-pin impact printer with 240 CPS performance
Rating: na%
Reviewed: na
Supplier: Citizen
Price: £250

Citizen Projet
Impressive ink-jet from Citizen. 360 DPI, 360 CPS
Rating: 70%
Reviewed: 22
Supplier: Citizen
Price: £496

Citizen Swift 24
Well-made 24-pin impact engine. 121 CPS. Five fonts.
Rating: 70%
Reviewed: 4
Supplier: Citizen
Price: £428

Citizen Swift 9
9-pin impact printer .121 CPS. Three fonts. Colour kit avail.
Rating: 90%
Reviewed: 4
Supplier: Citizen
Price: £280

Citizen Swift 90C
Budget priced 9-pin colour with six fonts.
Rating: 70%
Reviewed: 29
Supplier: Citizen
Price: £169

Clarity 16
16-bit stereo sound sampler with adjustable volume
Rating: 70%
Reviewed: 25
Supplier: MicroDeal
Price: £149

ColourPic
Real-time colour video digitiser
Rating: 70%
Reviewed: 2
Supplier: JCL
Price: £399

ColourPic+
Real-time colour video digitiser with animation
Rating: 70%
Reviewed: 22
Supplier: JCL
Price: £699

CSA Mega Miget
33MHz 68030+FPU accelerator for the A500
Rating: 70%
Reviewed: 3,5
Supplier: Omega Projects
Price: £389

CSA Rocket Launcher
50MHz 68030+FPU accelerator for the A1500
Rating: 90%
Reviewed: 20
Supplier: Omega Projects
Price: £549

DataFlyer 2000
Hard drive card for A1500 and above
Rating: 50%
Reviewed: 1
Supplier: Trilogic
Price: £350

DCTV
Pseudo 24-bit video enhancer for all machines. 368x580 pixels
Rating: 70%
Reviewed: 12
Supplier: Silica
Price: £499

Diconix 701
PC ink-jet printer. 300 DPI, 200CPS.
Rating: 50%
Reviewed: 22
Supplier: Kodak
Price: £399

DigiTiger II
Simple colour video capture system
Rating: 70%
Reviewed: 17
Supplier: SA&H
Price: £200

Digiview IV
Simple colour video capture system
Rating: 70%
Reviewed: na
Supplier: Silica
Price: £150

Emplant
Interesting Macintosh emulator for A1500(+)
Rating: 70%
Reviewed: 28
Supplier: Blittersoft
Price: £254.95

Epson Epl4000
6PPM, 300DPI laser engine. 512K basic RAM.
Rating: 70%
Reviewed: 22
Supplier: Epson
Price: £799

Epson LQ400
Budget 24-pin monochrome printer. 121 CPS
Rating: 70%
Reviewed: 4
Supplier: Epson
Price: £269

Epson LX850
Basic 9-pin engine from Epson. Three fonts. 106 CPS
Rating: 50%
Reviewed: 4
Supplier: Epson
Price: £269

Epson SQ870
Epson's answer to the Projet. Eight fonts. 360 CPS, 360 DPI.
Rating: 70%
Reviewed: 22
Supplier: Epson
Price: £659

Epson Stylus 800
Budget ink-jet printer (it shows). 360DPI, 360 CPS.
Rating: 50%
Reviewed: 29
Supplier: Epson
Price: £295

FD Internal 2000
Internal floppy disk for large model Amigas
Rating: 70%
Reviewed: 8
Supplier: Power Computing
Price: £50

Floptical Disk
Removable optical disk for the Amiga
Rating: 90%
Reviewed: 8
Supplier: Digital Micronics
Price: £650

Frame Grabber
Real-time colour video capture system
Rating: na
Reviewed: na
Supplier: Marcam
Price: £599

Fujitsu B100
Little known ink-jet. Three fonts, 300 DPI, 160 CPS.
Rating: 70%
Reviewed: 22
Supplier: Fujitsu
Price: £349

Fujitsu B200
Improved B100. Three fonts, 300 DPI, 180 CPS.
Rating: 50%
Reviewed: 22
Supplier: Fujitsu
Price: £499

Fusion Forty
50MHz 68040+FPU accelerator for the A1500(+)
Rating: na%
Reviewed: na
Supplier: Power Computing
Price: £1999

G-Force
25MHz 68030+FPU for the A1500(+) from GVP
Rating: 70%
Reviewed: 15
Supplier: Silica
Price: £599

G-Force 030
40MHz 68030+FPU for the A1500(+) from GVP
Rating: 70%
Reviewed: 27
Supplier: Silica
Price: £699

G-Force 40
28MHz 68040+FPU for the A1500(+) from GVP
Rating: na%
Reviewed: na
Supplier: Silica
Price: £1999

GeneSys
All-singing genlock from the UK masters
Rating: 70%
Reviewed: 29
Supplier: G2 Systems
Price: £934

GenieScan
Hand-held 400DPI monochrome scanner
Rating: na%
Reviewed: na
Supplier: Datel
Price: £130

Genitizer
Entry level touch tablet. with a 9' x 6' working area
Rating: na%
Reviewed: na
Supplier: Datel
Price: £130

GI Scanner
Hand-held 400DPI monochrome scanner
Rating: 90%
Reviewed: 5
Supplier: Golden Image
Price: £150

Glare Guard
High-priced performance VDU screen filter
Rating: 70%
Reviewed: 26
Supplier: GND Distribution
Price: £86.25

GT6500
Epson's amazing 16.8 million colour 600DPI flat-bed
Rating: 90%
Reviewed: na
Supplier: Power Computing
Price: £1300

GVP DSS
GVP's 8-bit stereo sampler with volume control
Rating: 70%
Reviewed: 3
Supplier: Silica
Price: £60

GVP Impact II+
Ultimate hard disk/RAM expansion for A500(+)
Rating: 90%
Reviewed: 1,8,13
Supplier: Silica
Price: £399

GVP Impact IIHC+8
Excellent hard card for A1500+
Rating: 70%
Reviewed: 8,13
Supplier: Silica
Price: £299

GVP IV24
24-bit video card for A1500(+). 910x576 pixels
Rating: 70%
Reviewed: 12
Supplier: Silica
Price: £1799

GVP Series 2
RAM expansion card from the Amiga masters
Rating: 70%
Reviewed: 24
Supplier: Power Computing
Price: £159

Hama 290
SHVS genlock with fade and dissolve
Rating: 70%
Reviewed: 16
Supplier: Hama PVAC
Price: £749

Harlequin
24-bit video card for A1500(+). 910x576 pixels
Rating: 90%
Reviewed: 11
Supplier: ACS
Price: £1400

ICD Kickback
Keyboard switchable Kickstart ROM sharer
Rating: na
Reviewed: na
Supplier: Silica
Price: £27

Image Master
Professional genlock that does it all
Rating: na
Reviewed: na
Supplier: Neriki
Price: £1150

KCS HD2
High-performance, dual high-density floppy drive
Rating: 90%
Reviewed: 35
Supplier: Bitcon Devices
Price: £199

Kickswitch
British-made keyboard switchable Kickstart ROM sharer
Rating: na
Reviewed: na
Supplier: Omega Projects
Price: £25

M1230XA
50MHz 68030+FPU accelerator for the A1200
Rating: 70%
Reviewed: 29
Supplier: Indy Direct
Price: £299

Megamix Master
From the Vidi Amiga men an 8-bit stereo sound grabber.
Rating: na
Reviewed: na
Supplier: Rombo
Price: £39.95

MicroGen
Budget-priced-general purpose fade/dissolve genlock
Rating: na
Reviewed: na
Supplier: Power Computing
Price: £199

MicroSampler
Budget priced 8-bit stereo sampler
Rating: na
Reviewed: na
Supplier: Datel
Price: £25

MiniGen
The simplest genlock money can buy!
Rating: 90%
Reviewed: 31
Supplier: Lola
Price: £49.95

NEC P20
Reliable 24 pin impact engine. Eight resident fonts. 115 CPS
Rating: 70%
Reviewed: 4
Supplier: NEC
Price: £351

Nexus HC
Internal hard drive card for A1500+
Rating: 70%
Reviewed: 8,13
Supplier: Power Computing
Price: £350

Novia 30i
Internal IDE hard disk for A500(+)
Rating: 50%
Reviewed: 8
Supplier: Power Computing
Price: £399

Oki ML380
Tough, office-type printer. 24 pin. 127 CPS. Three resident fonts.
Rating: 70%
Reviewed: 4
Supplier: Oki
Price: £386

Oki OL400
4PPM, 300DPI LED page printer. Reliable, low-cost. 512K RAM.
Rating: 90%
Reviewed: 22
Supplier: Oki
Price: £549

Opal Vision
24-Bit video card for A1500(+).

768x580 pixels
Rating: 90%
Reviewed: 20
Supplier: Silica
Price: £899

Optomouse
High-resolution optical mouse with no ball
Rating: 70%
Reviewed: 28
Supplier: Gasteiner
Price: £14.95

PC Dual Drive
Double-decker external floppy disk for all Amigas
Rating: 70%
Reviewed: 0,8
Supplier: Power Computing
Price: £120

PC501
Internal RAM expansion for the A500
Rating: 70%
Reviewed: 24
Supplier: Power Computing
Price: £30

PC501+
1Mb internal RAM expansion for the A500+
Rating: 90%
Reviewed: 24
Supplier: Power Computing
Price: £36

PC601
Internal RAM expansion for the A600
Rating: 90%
Reviewed: 24
Supplier: Power Computing
Price: £40

PC880B
Popular external floppy disk for all Amigas
Rating: 90%
Reviewed: 8
Supplier: Power Computing
Price: £55

Power 8Mb
External RAM expansion for the A500(+)
Rating: 90%
Reviewed: 24
Supplier: Power Computing
Price: £109

Power Scanner II
Hand-held 400DPI monochrome scanner
Rating: 90%
Reviewed: 14
Supplier: Power Computing
Price: £99

PowerScan Colour
Hand-held 400DPI 256 colour scanner
Rating: 50%
Reviewed: 23
Supplier: Power Computing
Price: £239

Prima
Internal IDE hard disk for A500(+)
Rating: 70%
Reviewed: 8
Supplier: Power Computing
Price: £499

Primera Printer
Photorealisic colour printer
Rating: 93%
Reviewed: 37
Supplier: Power Computing
Price: £649

Pro Agnus
2Mb Agnus CHIP for A500/A2000
Rating: 70%
Reviewed: 24
Supplier: WTS Electronics
Price: £139

Pro RAM 601
Internal 512K RAM expansion for the A600
Rating: 90%
Reviewed: 24
Supplier: WTS Electronics
Price: £38

Pro RAM Plus
Internal 512K RAM expansion for the A500
Rating: 50%
Reviewed: 8
Supplier: Datel
Price: £25

ProGen
Simple genlock
Rating: na%
Reviewed: na
Supplier: Gordon Harwood
Price: £130

RAM Master II
1.5Mb RAM internal expansion for the A500
Rating: na%
Reviewed: na
Supplier: Datel
Price: £100

Real-time Clock
Essential battery-backed up clock system for A1200 machine
Rating: 70%
Reviewed:
Supplier: First Choice
Price: £17.99

Rembrant
24-bit video card for A1500(+). 1024x1024 pixels
Rating: 70%
Reviewed: 13
Supplier: Power Computing
Price: £1499

Rendale 8802FMC
Very simple but effective genlock
Rating: 90%
Reviewed: 31
Supplier: Marcam
Price: £178

Retina
24-bit video card for A1500(+). 2400x 1200 pixels
Rating: 70%
Reviewed: 27
Supplier: ACS
Price: £345

RF542C
Unique 5.25' external floppy drive from Roctec
Rating: 70%
Reviewed: 0,8
Supplier: Silica
Price: £80

Ricoh LP1200
6PPM, 40o DPI laser engine with 2Mb basic RAM.
Rating: 90%
Reviewed: 22
Supplier: Silica
Price: £820

Roc Key
Genlock add-on (chromakey) for the RocGen Plus.
Rating: 70%
Reviewed: 19
Supplier: Silica
Price: £350

RocGen
Simple genlock with fader
Rating: 70%
Reviewed: 8
Supplier: Silica
Price: £117

RocGen Plus
Simple genlock with fade and dissolve. Noisy
Rating: 70%
Reviewed: 10
Supplier: Silica
Price: £199

Roclite
Sexy little slimline floppy drive for all Amigas
Rating: 90%
Reviewed: 8
Supplier: Silica
Price: £60

Sample Studio 2
8-bit stereo sampler
Rating: na%
Reviewed: na
Supplier: Datel
Price: £70

Sharp JX100
Hand-held 200DPI colour scanner
Rating: na
Reviewed: na
Supplier: Silica
Price: £695

Sharp JX300
300DPI colour flat-bed scanner
Rating: na
Reviewed: na
Supplier: Silica
Price: £3600

Sound Enhancer
Bass and treble boost control for Amiga sound.
Rating: na
Reviewed: na
Supplier: Omega Projects
Price: £40

Sound Trap 3
Tiny, if basic, monophonic 8-bit sound sampler
Rating: 70%
Reviewed: 3
Supplier: Omega Projects
Price: £30

Star Laser 4
4PPM, 300 DPI laser. 1M basic RAM.
Rating: 70%
Reviewed: 22
Supplier: Star
Price: £1173

Star LC200-24
Colour/monochrome impact. Four resident fonts. 91 CPS
Rating: 70%
Reviewed: 4
Supplier: Star
Price: £304

Stereo Master
Budget-priced 8-bit stereo sound sampler with volume control
Rating: 70%
Reviewed: 11
Supplier: HiSoft
Price: £40

Stereo sampler 2
8-bit stereo sound sampler with volume control
Rating: na
Reviewed: na
Supplier: Trilogic
Price: £40

Supra 500XP
External hard drive/RAM expansion for A500(+)
Rating: 70%
Reviewed: 1,8,13
Supplier: WTS Electronics
Price: £489

SyQuest Tape Backup
SCSI tape streamer for Amigas with SCSI port
Rating: 50%
Reviewed: 8
Supplier: Omega Projects
Price: £600

Toshiba CD-ROM
CD-ROM for Amigas with SCSI ports
Rating: 70%
Reviewed: 27
Supplier: Alamthera System
Price: £499

V-Lab
Real-time colour video capture system
Rating: 70%
Reviewed: 17
Supplier: ACS
Price: £300

Video Centre 2
Well-endowed genlock from the British SVHS masters
Rating: na
Reviewed: na
Supplier: G2 Systems
Price: £1170

Video Centre 3
High-performance suite from the masters
Rating: 70%
Reviewed: 7
Supplier: G2 Systems
Price: £1999.99

Video Master
Budget real-time video capture system with colour facility
Rating: 70%
Reviewed: 25
Supplier: MicroDeal
Price: £69.95

Videocomp G100
High cost, high performance genlock system
Rating: 90%
Reviewed: 3
Supplier: Silica
Price: £1800

VideoDigitiser
Real-time video capture system with colour facility
Rating: na
Reviewed: na
Supplier: Datel
Price: £80

VideoMaster VM 2
Expensive, high-performance SHVS genlock
Rating: 50%
Reviewed: 1
Supplier: Power Computing
Price: £799

Videon
Colour video capture system.
Rating: na
Reviewed: na
Supplier: Power Computing
Price: £200

Vidi Amiga 12 AGA
Popular and powerful budget priced video digitiser
Rating: 90%
Reviewed: 22
Supplier: Rombo
Price: £99.95

Vidi Amiga 12RT AGA
Real-time 12-bit video digitiser
Rating: 80%
Reviewed: 36
Supplier: Rombo
Price: £199.99

Vidi Amiga 24RT AGA
Real-time 24-bit video digitiser
Rating: 80%
Reviewed: 36
Supplier: Rombo
Price: £299.95

VXL30
25MHz 68030+FPU internal accelerator for the A500
Rating: na
Reviewed: na
Supplier: Indi Direct
Price: £409

WordSync 2000
Hard disk card for A1500+
Rating: 70%
Reviewed: 1,13
Supplier: WTS Electronics
Price: £450

Public Domain

3D Objects Disk 1
Collection of Sculpt 4D objects
Rating: 70%
Reviewed: 8
Supplier: AmigaNuts
Disk: —

A64
Emulates the C64 on the Amiga
Rating: 90%
Reviewed: 3
Supplier: AmigaNuts
Disk: 1030

ABackup
Hard disk backup utility
Rating: 70%
Reviewed: 23
Supplier: Fred Fish
Disk: F759

Acc Assembler
Fast Amiga assembler
Rating: 90%
Reviewed: 6
Supplier: AmigaNuts
Disk: —

Account Master
Useful home accounts program
Rating: 70%
Reviewed: 19
Supplier: Various
Disk: -

AIBB
Standard bench tests for the Amiga
Rating: 90%
Reviewed: 25
Supplier: PD Soft
Disk: V948

All 1.35
Intuition based archiving tool
Rating: 70%
Reviewed: 27
Supplier: Fred Fish
Disk: F825

Amiga E
Strange compiled programming language
Rating: 70%
Reviewed: 26
Supplier: Fred Fish
Disk: —

Amiga Pascal
Version of Wirth's first attempt at programming
Rating: 70%
Reviewed: 27
Supplier: Fred Fish
Disk: F849

AmigaDex
Superb pop-up address book
Rating: 90%
Reviewed: 19
Supplier: PD Soft
Disk: V757

Aminet CD-ROM
CD-ROM of Amiga software from Internet
Rating: 94%
Reviewed: 37
Supplier: 17-Bit
Disk: CD: £19.99

Anti Virus
Kill those viruses?!
Rating: 90%
Reviewed: 19
Supplier: Soft Expression
Disk: U155

AppISizer
Discover the size of a drawer easily
Rating: 90%
Reviewed: 28
Supplier: Fred Fish
Disk: F853

ARestaure
Restores deleted (trashed) files
Rating: 90%
Reviewed: 23
Supplier: Fred Fish
Disk: F760

ARexx Guide
Very handy AmigaGuide help for ARexx
Rating: 95%
Reviewed: 37
Supplier: PD-Soft
Disk: V1219

ARTM
Amiga real-time system monitor
Rating: 90%
Reviewed: 7
Supplier: 17-bit
Disk: 1274

Astro 22
Astrology program — give Rus. Grant the push1
Rating: 70%
Reviewed: 17
Supplier: PD Soft
Disk: V685

AutoSave
Execute ARexx script at regular intervals
Rating: 70%
Reviewed: 24
Supplier: Fred Fish
Disk: F711

Awp
Animate Workbench 2.0+ clock pointer
Rating: 70%
Reviewed: 11
Supplier: Fred Fish
Disk: F554

AZSpell
Spelling checker for text processors
Rating: 70%
Reviewed: 13
Supplier: DG
Disk: Disk:

Backup
Hard disk backup utility
Rating: 90%
Reviewed: 20
Supplier: Fred Fish
Disk: 724

Banner
Print huge banners on your Amiga
Rating: 70%
Reviewed: 10
Supplier: T-Bag
Disk: 52

BBase 3
Powerful database program
Rating: 90%
Reviewed: 28
Supplier: Fred Fish
Disk: F860

BBBS
Buletin board system
Rating: 70%
Reviewed: 20
Supplier: Fred Fish
Disk: F729

BigAnim
Animation player for very large files
Rating: 95%
Reviewed: 36
Supplier: PD-Soft
Disk: V1230

Boot Logo
Display a picture while booting
Rating: 70%
Reviewed: 23
Supplier: Fred Fish
Disk: F754

BRef
Basic cross-referencing utility
Rating: 70%
Reviewed: 9
Supplier: Fred Fish
Disk: F494

ButExchange
Reverse mouse buttons (for left-handers)
Rating: 70%
Reviewed: 9
Supplier: Fred Fish
Disk: F494

Cass 1.1

CDTV Player
Play audio CDs on A570 from Workbench
Rating: 90%
Reviewed: 23
Supplier: Fred Fish
Disk: F749

CFX
File type identifier. Very handy!
Rating: 90%
Reviewed: 22
Supplier: Fred Fish
Disk: F750

CG Fonts
Compugraphic fonts for Workbench 2
Rating: 70%
Reviewed: 19
Supplier: PD Soft
Disk: V713

ChemBalance
Balance chemical equations
Rating: 70%
Reviewed: 23
Supplier: Fred Fish
Disk: F759

Clock Tick
2.0-like clock, mouse pointer
Rating: 70%
Reviewed: 9
Supplier: T-Bag
Disk: 58

Comms II Collection
Colection of Terminal and related software
Rating: 84%
Reviewed: 37
Supplier: Scribble PD
Disk: U241a&b

Complete Bible
The King James Bible on three disks
Rating: 70%
Reviewed: 19
Supplier: PD Soft
Disk: V715-V717

CPK
Create rendered molecule illustrations
Rating: 70%
Reviewed: 26
Supplier: Fred Fish
Disk: F809

CZED
Patch editor for Casio MIDI synthesisers
Rating: 90%
Reviewed: 10
Supplier: Fred Fish
Disk: F223

DataBench
Very good PD database
Rating: 70%
Reviewed: 26
Supplier: Fred Fish
Disk: F820

DCopy
Disk copier
Rating: 70%
Reviewed: 10
Supplier: AmigaNuts
Disk: 700

DevRen
Rename devices (including DF0:)
Rating: 70%
Reviewed: 10
Supplier: GTS
Disk: Utils 1

DICE
Matt Dillon's superb C compiler
Rating: 90%
Reviewed: 3
Supplier: Fred Fish
Disk: F443

Disk Mate
Powerful Workbench disk copier
Rating: 90%
Reviewed: 28
Supplier: Fred Fish
Disk: F754

Disk Speed
Floppy disk drive benchmark program
Rating: 70%
Reviewed: 10
Supplier: GTS
Disk: Utils 1

DPaint Tutorial
Comprehensive Deluxe Paint tutorial
Rating: 90%
Reviewed: 22
Supplier: Soft Express
Disk: U160

DPU
Hex disk and file editor
Rating: 70%
Reviewed: 20
Supplier: Fred Fish
Disk: F721

Drag It!
Drag a window without having to get the title bar
Rating: 90%
Reviewed: 25
Supplier: Fred Fish
Disk: F792

Dynamic Skys
Nice astronomy program
Rating: 92%
Reviewed: 37
Supplier: PD-Soft
Disk: V1265

EasyBanker
Home finance program
Rating: 70%
Reviewed: 10
Supplier: GTS
Disk: Home 2

Electronic Baby Book
All about electrifying babies
Rating: 70%
Reviewed: 16
Supplier: PD Soft
Disk: V658

Elements
Periodic table of chemical elements
Rating: 70%
Reviewed: 13
Supplier: Fred Fish
Disk: F593

FastIntroMaker
Create your own scrolling demos
Rating: 70%
Reviewed: 26
Supplier: Fred Fish
Disk: F814

File and HD Management
Hard disk drive utilities
Rating: 90%
Reviewed: 15
Supplier: PD Soft
Disk: V573

File and HD Management 2
More hard disk drive utilities
Rating: 50%
Reviewed: 16
Supplier: PD Soft
Disk: V575

File Master
Binary file editor (like ZAP)
Rating: 90%
Reviewed: 10
Supplier: GTS
Disk: Utils 1

File Utils 3
A collection of file and hard disk utilities

Rating: 70%
Reviewed: 21
Supplier: PD Soft
Disk: V815

Filer
SID clone for Workbench 2
Rating: 70%
Reviewed: 11
Supplier: Fred Fish
Disk: F562

FindIt
Search for named files on any disk
Rating: 70%
Reviewed: 22
Supplier: Fred Fish
Disk: F731

Flash Disk
Another disk optimiser
Rating: 70%
Reviewed: 10
Supplier: GTS
Disk: Utils 2

Font Manager
Take over control of your bitmapped fonts
Rating: 70%
Reviewed: 10
Supplier: Digitz
Disk: 149

FontViewer
Keep track of all your bitmapped fonts
Rating: 70%
Reviewed: 22
Supplier: Fred Fish
Disk: F732

Format 1.1
Replacement for AmigaDOS disk format
Rating: 90%
Reviewed: 11
Supplier: Fred Fish
Disk: F535

Four Stroke Engine
Demonstrates the operation of an internal combustion engine
Rating: 70%
Reviewed: 19
Supplier: PD Soft
Disk: V738

Frac
Adventure game creator for non-programmers
Rating: 70%
Reviewed: 18
Supplier: AmigaNuts
Disk: 1251

Gadtool Box
Create Intuition front ends with ease!
Rating: 90%
Reviewed: 22
Supplier: Fred Fish
Disk: F731

Grab Kick
Grabs Kickstart ROM image to disk file
Rating: 70%
Reviewed: 27
Supplier: Fred Fish
Disk: F831

HAM Radio
Amateur radio user's utilities in AmigaBASIC!
Rating: 70%
Reviewed: 18
Supplier: Aardvark PD
Disk: H/000-H/01

Hard Drive Special
Collection of HD utils
Rating: 90%
Reviewed: 9
Supplier: GTS
Disk: —

Home Business Pack
Database, Spreadsheet and Word processor
Rating: 90%
Reviewed: 25
Supplier: Anglia PD
Disk: HB1

Home Help
Computerised grocery list
Rating: 70%
Reviewed: 10
Supplier: GTS
Disk: Home 1

Home Manager
Personal organiser
Rating: 90%
Reviewed: 16
Supplier: PD Soft
Disk: V660

IBEM
Emulates PC compatibles in software
Rating: 70%
Reviewed: 3
Supplier: Virus Free PD
Disk: 1485

ICalc
A brilliant Shell-based calculator.
Rating: 90%
Reviewed: 22
Supplier: Fred Fish
Disk: F742

InputLock
Turn off mouse and keyboard
Rating: 70%
Reviewed: 9
Supplier: Fred Fish
Disk: F494

Install 1.2
Workbench install disk utility
Rating: 90%
Reviewed: 26
Supplier: Fred Fish
Disk: F817

JC Graphic Demo
Demo of Shareware graphics program
Rating: 90%
Reviewed: 23
Supplier: Fred Fish
Disk: F760

K1 Editor
Patch editor for Kawaii K1
Rating: 90%
Reviewed: 10
Supplier: Fred Fish
Disk: F332

KeyCall
Load applications from hotkeys
Rating: 90%
Reviewed: 28
Supplier: Fred Fish
Disk: F854

KingFisher
Detailed database of Fred Fish disks
Rating: 90%
Reviewed: 5
Supplier: GTS
Disk: —

LC-24/200 Fonts
Downloadable fonts for Star printers
Rating: 70%
Reviewed: 8
Supplier: NBS
Disk: L503

Learn&Play
Maths/Reflex/Logic
Rating: 70%
Reviewed: 5
Supplier: Riverdene
Disk: MIS637

LHA 1.11
Very popular archiving utility
Rating: 70%
Reviewed: 13
Supplier: Fred Fish
Disk: F593

Liner
Ideas processor (like "Flow").
Rating: 70%
Reviewed: 10
Supplier: Fred Fish
Disk: F285

Lock Device
Better AmigaDOS Lock command
Rating: 70%
Reviewed: 10
Supplier: GTS
Disk: Utils 1

Lock It
Password protect your files
Rating: 70%
Reviewed: 25
Supplier: Fred Fish
Disk: F798

LS
Very powerful Unix-like LS command for AmigaDOS
Rating: 90%
Reviewed: 24
Supplier: Fred Fish
Disk: F772

Macro 1.0
Record and play back user-inputs
Rating: 70%
Reviewed: 24
Supplier: Fred Fish
Disk: F786

Magnetic Pages
Create your own disk magazine
Rating: 90%
Reviewed: 17
Supplier: PD Soft
Disk: V688

Main Event
Event scheduler
Rating: 70%
Reviewed: 20
Supplier: Soft Expression
Disk: U149

MainActor
Plays 'Anim' type animations from disk
Rating: 90%
Reviewed: 36
Supplier: PD-Soft
Disk: V1229

Mandle Mountains
Creates 3D Mandlebrot scenes
Rating: 70%
Reviewed: 5
Supplier: Softville
Disk: 751

Map Editor
Map editor for AMOS BASIC programmers
Rating: 70%
Reviewed: 19
Supplier: AmigaNuts
Disk: —

Map Trix
A fractal texture mapping utility
Rating: 90%
Reviewed: 28
Supplier: Fred Fish
Disk: F853

Master Virus Killer
Another collection of virus killers
Rating: 70%
Reviewed: 1
Supplier: AmigaNuts
Disk: 971

Math Plot
Mathematical function plotter
Rating: 70%
Reviewed: 27
Supplier: Fred Fish
Disk: F850

Maths 4 Fun
Maths tutor
Rating: 70%
Reviewed: 9
Supplier: AmigaNuts
Disk: 1146

Maths Reflex
Test your maths skills
Rating: 70%
Reviewed: 20
Supplier: Anglia PD
Disk: C728

MED 3.11
Popular and powerful soundtracker
Rating: 90%
Reviewed: 1
Supplier: AmigaNuts
Disk: 973

MegaD 2.0
Brilliant SID-like directory helper
Rating: 90%
Reviewed: 22
Supplier: Fred Fish
Disk: F736

MegaED
Powerful text editor
Rating: 90%
Reviewed: 22
Supplier: Fred Fish
Disk: F743

MemoSnap
Programmers tool to trace lost memory pools
Rating: 70%
Reviewed: 27
Supplier: Fred Fish
Disk: F826

MessyDOS
Read and write PC disks in an Amiga drive
Rating: 90%
Reviewed: 6
Supplier: NBS
Disk: U619

MessySID 2
Read and write PC disks in an Amiga drive
Rating: 90%
Reviewed: 13
Supplier: PD Soft
Disk: V490

MIDI Library
Program MIDI applications
Rating: 90%
Reviewed: 9
Supplier: Fred Fish
Disk: F227

MinTerms
Calculates Blitter Minterms
Rating: 70%
Reviewed: 28
Supplier: Fred Fish
Disk: F560

Module Master
Play modules in various formats
Rating: 70%
Reviewed: 9
Supplier: T-Bag
Disk: 58

Multiplot
Data graphing program
Rating: 70%
Reviewed: 7
Supplier: Fred Fish
Disk: F467

NComm
Very powerful terminal emulator
Rating: 80%
Reviewed: 7
Supplier: 17-Bit
Disk: 1275

New Aqua
Database of Fred Fish disks
Rating: 90%
Reviewed: 27
Supplier: Fred Fish
Disk: F837

New PRT
Printer drivers for PageStream
Rating: 70%
Reviewed: 10
Supplier: Digitiz
Disk: 149

Nice Prefs
Extra Workbench 2.0 Preferences settings
Rating: 90%
Reviewed: 24
Supplier: Fred Fish
Disk: F780

North C
Charityware C compiler
Rating: 90%
Reviewed: 6
Supplier: AmigaNuts
Disk: 1112

PageStream Fonts
Fonts for PageStream
Rating: 90%
Reviewed: 10
Supplier: Digitiz
Disk: 149

PaperBack!
Create printed booklets with ease
Rating: 90%
Reviewed: 22
Supplier: Fred Fish
Disk: F749

Password
Password protection for your hard drive
Rating: 70%
Reviewed: 26
Supplier: Fred Fish
Disk: F804

PCQ Pascal
Another version of Wirth's first attempt
Rating: 70%
Reviewed: 6
Supplier: AmigaNuts
Disk: 1113

Phone Line Watcher
Keeps track of your 'phone bill
Rating: 70%
Reviewed: 9
Supplier: T-Bag
Disk: 58

Pict Saver
Grabs screens in IFF format
Rating: 90%
Reviewed: 9
Supplier: Fred Fish
Disk: F543

Popup Menu
Modified Workbench menus
Rating: 70%
Reviewed: 23
Supplier: Fred Fish
Disk: F756

Post
Postscript interpreter for normal printers
Rating: 90%
Reviewed: 27
Supplier: Fred Fish
Disk: F828-830

PowerSnap
Grab screen text as ASCII files
Rating: 90%
Reviewed: 8
Supplier: Fred Fish
Disk: F542

Printer Drivers
Drivers for the Star and Canon engines
Rating: 90%
Reviewed: 19
Supplier: PD Soft
Disk: V724

ProCAD
Shareware PCB designer for electronics bods
Rating: 84%
Reviewed: 37
Supplier: Softville
Disk: SOF920

QDisk
Get size of AmigaDOS volumes
Rating: 70%
Reviewed: 28
Supplier: Fred Fish
Disk: F853

QMouse
Mouse accelerator for Workbench
Rating: 90%
Reviewed: 24
Supplier: Fred Fish
Disk: F789

Rippers Disk
Rip modules from memory
Rating: 70%
Reviewed: 5
Supplier: 17-bit
Disk: 1055

RMB Shift
Select multiple icons on Workbench 1.3
Rating: 70%
Reviewed: 11
Supplier: Fred Fish
Disk: F547

RunMe
Run programs from menus
Rating: 90%
Reviewed: 9
Supplier: AmigaNuts
Disk: 1186

SetNoClick
Switch off that annoying empty drive click
Rating: 70%
Reviewed: 10
Supplier: GTS
Disk: Utils 1

Shapes
Maths/Logic
Rating: 70%
Reviewed: 5
Supplier: Riverdene
Disk: GAM907

SID 2
Powerful directory utility
Rating: 90%
Reviewed: 16
Supplier: 17-Bit
Disk: —

SKSH
Unix "KSH" like Shell replacement
Rating: 90%
Reviewed: 25
Supplier: Fred Fish
Disk: F791

Slideshow Kit
Create your own slideshows
Rating: 70%
Reviewed: 3
Supplier: Virus Free
Disk: 1465

Snap 1.4
Grabs screen text into clipboard
Rating: 70%
Reviewed: 10
Supplier: Fred Fish
Disk: F326

Sound Ed
Sample editor
Rating: 70%
Reviewed: 5
Supplier: Fred Fish
Disk: F486

Spectra Paint
Painting package
Rating: 70%
Reviewed: 3
Supplier: Slipped Disk
Disk: 19

Spell 4 Fun
Spelling
Rating: 70%
Reviewed: 9
Supplier: AmigaNuts
Disk: 1146

Strip It
Removes comments from ASCII source code
Rating: 70%
Reviewed: 22
Supplier: Fred Fish
Disk: 750

Super Format
Workbench 2.1-like disk formatter
Rating: 90%
Reviewed: 27
Supplier: Fred Fish
Disk: F835

SuperDark
Modular screen blanker
Rating: 70%
Reviewed: 27
Supplier: Fred Fish
Disk: F835

SysInfo
System information program - very nice
Rating: 90%
Reviewed: 11
Supplier: Fred Fish
Disk: F571

Term 3.1
Terminal emulator. The best available!
Rating: 90%
Reviewed: 27
Supplier: Fred Fish
Disk: F831-833

Text Plus 3.0
Word processor
Rating: 70%
Reviewed: 1
Supplier: PD Soft
Disk: V261

Tools Daemon
Run programs from 2.0 Workbench Tools menu
Rating: 70%
Reviewed: 11
Supplier: Fred Fish
Disk: F561

Touch Typing Tutor
Teach yourself touch typing
Rating: 70%
Reviewed: 17
Supplier: NBS
Disk: CLU03

Twilight Zone
After-Dark like screen blanker
Rating: 90%
Reviewed: 24
Supplier: Fred Fish
Disk: F782

Unix Dirs
Unix-like directory movement
Rating: 90%
Reviewed: 27
Supplier: Fred Fish
Disk: F850

VirusZ
Virus killer
Rating: 90%
Reviewed: 26
Supplier: Fred Fish
Disk: F786

WFILE
Convert PC and Mac text files
Rating: 90%
Reviewed: 24
Supplier: Fred Fish
Disk: F776

Will and Testament
Template for writing your own will
Rating: 90%
Reviewed: 19
Supplier: PD Soft
Disk: V706

Word Wright
Word processor
Rating: 70%
Reviewed: 13
Supplier: PD Soft
Disk: V28

X Tables
Maths (multiplication tables)
Rating: 90%
Reviewed: 9
Supplier: AmigaNuts
Disk: 1146

ZX Emulator
Makes the Amiga into a ZX-Spectrum!
Rating: 70%
Reviewed: 3
Supplier: AmigaNuts
Disk: 1030

Software

AccuTrans 3D
Converts 3D objects
Rating: 70%
Reviewed: 33
Supplier: Micromouse
Price: £39.29

ADPTools Professional
Remote control for ASDG's Art Department Pro
Rating: 70%
Reviewed: 35
Supplier: White Night
Price: £125

Advantage
One of the best all-round Amiga spreadsheets
Rating: 70%
Reviewed: 1,9
Supplier: Silica
Price: £100

Aladdin 4D
Amazing ray-traced rendering package
Rating: 93
Reviewed: 38
Supplier: Hobbyte
Price: £213

Alternative Scroller
Video titling system
Rating: na
Reviewed: na
Supplier: Alternative Image
Price: £50

Ami-Back
Very popular hard disk backup system
Rating: 70%
Reviewed: 29
Supplier: Omega Projects
Price: £69.99

AmiBase 4
Simple flat-file database
Rating: 70%
Reviewed: 36
Supplier: One Vision Software
Price: £15

AmigaVision
Hypercard-like engine
Rating: na
Reviewed: na
Supplier: Commodore
Price: £80

AMOS
BASIC programming language with many extensions
Rating: 90%
Reviewed: 3,9
Supplier: Europress
Price: £50

AMOS 3D
3d-extension for AMOS BASIC
Rating: 90%
Reviewed: 5,7
Supplier: Europress
Price: £30

AMOS Compiler
Compiler for AMOS BASIC
Rating: 70%
Reviewed: 5,9
Supplier: Europress
Price: £30

AMOS Pro Compiler
Compiler extension for AMOS BASIC
Rating: 70%

Reviewed: 30
Supplier: Europress
Price: £34.95

AMOS Professional
Bigger, more powerful version of AMOS
Rating: 90%
Reviewed: 20
Supplier: Europress
Price: £69.95

AntiA
Font enhancement utility
Rating: 70%
Reviewed: 8
Supplier: Zen
Price: £40

Art Department Professional
Latest version of famous image processor
Rating: 84%
Reviewed: 37
Supplier: First Computer Center
Price: £149.95

Art Expression
Structured (object oriented) drawing package
Rating: 70%
Reviewed: 24
Supplier: Silica
Price: £150

Bars and Pipes Pro 2
Very powerful music and multimedia engine
Rating: 80%
Reviewed: 31
Supplier: Meridian
Price: £299.99

Brilliance
The Amiga's first real paint program for years. A classic.
Rating: 95%
Reviewed: 38
Supplier: Meridian
Price: £199.95

Broadcast Titler
Video titling system
Rating: 70%
Reviewed: 2
Supplier: Meridian
Price: £327.27

Caligari 24
Power drawing at a budget price
Rating: 50%
Reviewed: 33
Supplier: Amiga Centre Scotland
Price: £99.95

CanDO 2.51
Hypercard-like applications generator.
Rating: 70%
Reviewed: 33
Supplier: INOVAtronics
Price: £149.95

CMPanion
Patch editor for MIDI
Rating: 70%
Reviewed: 6
Supplier: Gajits
Price: £100

Count and Add
Maths
Rating: 70%
Reviewed: 10
Supplier: Lander Software
Price: £26

Cygnus ED 3
One of the best pure text editors around. A programmer's tool
Rating: 90%
Reviewed: 33
Supplier: Silica
Price: £79.95

Deluxe Paint 4
AGA version available.
Rating: 80%
Reviewed: 10
Supplier: Electronic Arts
Price: £90

Devpac 3
The ultimate assembly language development tool
Rating: 90%
Reviewed: 10,12
Supplier: HiSoft
Price: £70

Directory Opus 4
Super-powerful graphical window on AmigaDOS
Rating: 90%
Reviewed: 28
Supplier: Silica
Price: £64.95

Disney Animation Studio
Animation program from the masters.
Rating: 70%
Reviewed: 1
Supplier: Silica
Price: £80

Easy AMOS
Stripped down version of AMOS BASIC with debugger
Rating: 90%
Reviewed: 12
Supplier: Europress
Price: £35

Elan Performer 2
Video presentation system
Rating: 70%
Reviewed: 11
Supplier: Silica
Price: £180

Essence II
Specially generated textures
Rating: 90%
Reviewed: 32
Supplier: Alternative Image
Price: £100

Final Copy 2
Upgrade to the hugely successful Final Copy
Rating: 70%
Reviewed: 25
Supplier: Gordon Harwood
Price: £79.95

Final Writer
Upgrade to Final Copy 2
Rating: 90%
Reviewed: 33
Supplier: Gordon Harwood
Price: £129.95

Fun School 3
3 R's software with fun graphics
Rating: 90%
Reviewed: 2
Supplier: Europress
Price: £25

Fun School 4
3 R's software with fun graphics
Rating: 90%
Reviewed: 9
Supplier: Europress
Price: £25

GB Route Edit
Editor for users of GB Route Plus
Rating: 80%
Reviewed: 10
Supplier: Complex Computers
Price: £30

GB Route Plus
Automated route planning for UK drivers
Rating: 90%
Reviewed: 10
Supplier: Complex Computers
Price: £80

GigaMem
Virtual memory for big Amigas with bigger hard disks
Rating: 90%
Reviewed: 33
Supplier: Gasteiner
Price: £69.95

HiSoft BASIC
Under-rated version of the BASIC language. Internal compiler
Rating: 70%
Reviewed: 9
Supplier: HiSoft
Price: £50

HiSpeed Pascal
Interesting implementation of Pascal from the language masters
Rating: 70%
Reviewed: 19
Supplier: HiSoft
Price: £100

Home Office 2
Superb integrated office suite from Gold Disk
Rating: 90%
Reviewed: 20
Supplier: Silica
Price: £99.99

Hyperbook
Another Hypercard clone
Rating: 70%
Reviewed: 6
Supplier: Silica
Price: £100

Image Master
Powerful image processing system
Rating: 90%
Reviewed: 18
Supplier: Amiga Centre Scotland
Price: £175

ImageFX
Rival to Art Department
Rating: 70%
Reviewed: 27
Supplier: Silica
Price: £269.95

Imagine 2
Powerful 3D modelling system
Rating: 70%
Reviewed: 14
Supplier: Silica
Price: £270

K-Spread 4
Power spreadsheet with GEM-like interface
Rating: 70%
Reviewed: 9
Supplier: HiSoft
Price: £150

Lattice C v5
The most popular commercial C compiler
Rating: 90%
Reviewed: 3,9
Supplier: HiSoft
Price: £230

Let's Spell
Writing
Rating: 70%
Reviewed: 2
Supplier: Softstuff
Price: £20

M2 Amiga
Amiga implementation of Wirth's Modula-2
Rating: 70%
Reviewed: 7,9
Supplier: Real-Time Associates
Price: £125

MakePath
Automatic path generator add-on for VistaPro
Rating: 70%
Reviewed: 23
Supplier: Meridian
Price: £24.95

Map Master
Image mapping system
Rating: 70%
Reviewed: 14
Supplier: Alternative Image
Price: £54

MediaPoint
High-end presentation authoring system like Scala
Rating: 91%
Reviewed: 37
Supplier: Meridian
Price: £329.99

Micro French
Learn franglais by computer
Rating: 70%
Reviewed: 17
Supplier: LCL
Price: £24

Mini Office 2
Integrated suite of office software
Rating: 60%
Reviewed: 17
Supplier: Europress Software
Price: £59.95

Moviesetter
Basic cartoon animation package from Gold Disk.
Rating: 70%
Reviewed: 14,23
Supplier: Silica
Price: £59.95

Music-X
Popular midi sequencing software
Rating: 70%
Reviewed: na
Supplier: MicroIllusions
Price: £150

Music-X Jnr.
Budget version of Music-X
Rating: 70%
Reviewed: na
Supplier: MicroIllusions
Price: £50

Nexus Backdrops
Backdrops for specialised video use
Rating: 50%
Reviewed: 29
Supplier: Video World
Price: £29.95

Noddy's Big Adventure
13 educational games featuring Noddy. Stage 1 Nat. Cir.
Rating: 90%
Reviewed: 35
Supplier: The Jumpin Company
Price: £24.99

OctaMed Companion
Tutorial for OctaMED Pro VB5
Rating: 90%
Reviewed: 29
Supplier: SeaSoft Computing
Price: £16.99

OctaMed Professional V5
Very powerful and hugely popular music/midi editor
Rating: 90%
Reviewed: 29
Supplier: SeaSoft Computing
Price: £30.50

PageStream 2.2
Inexpensive page layout program with Postscript
Rating: 50%
Reviewed: 2,3
Supplier: Meridian
Price: £69.95

Pen Pal
Fun word processor with integral database
Rating: 70%
Reviewed: 6,9,25
Supplier: Gordon Harwood
Price: £49.95

Pepe's Garden
The 3 Rs
Rating: 70%
Reviewed: 10
Supplier: Prisma
Price: £25.99

Personal Fonts Maker 2
256 colour font construction utility from Cloanto
Rating: 70%
Reviewed: 36
Supplier: Meridian
Price: £59.95

Personal Paint 4.0
Latest version of Cloanto's DPaint rival
Rating: 75%
Reviewed: 37
Supplier: Meridian
Price: £59.95

Picture Book
The 3 Rs
Rating: 90%
Reviewed: 10
Supplier: Triple R Education
Price: £20

PowerBase 3.34
Simple flat-file database
Rating: 70%
Reviewed: 30
Supplier: Amivision
Price: £14.95

Powerwaves 3.1
Makes 3D wave based objects
Rating: 70%
Reviewed: 21
Supplier: Database Software
Price: £17.95

Pro Draw 3.0
Structured drawing compliment to Pro Page
Rating: 90%
Reviewed: 27
Supplier: Silica
Price: £132

Pro Page 4
Big, well-respected page layout from Gold Disk
Rating: 90%
Reviewed: 27
Supplier: Silica
Price: £199.95

Professional Calc
Major upgrade of Advantage with many more features
Rating: 90%
Reviewed: na
Supplier: Silica
Price: £150

Protext V6
Latest version of Arnor's power word processor
Rating: 80%
Reviewed: 35
Supplier: Arnor
Price: £99

Quarterback 6.0
Latest version of popular HD backup utility
Rating: 82%
Reviewed: 37
Supplier: Meridian
Price: £74.95

Quarterback Tools Deluxe
Collection of disk utilities
Rating: 90%
Reviewed: 31
Supplier: Meridian
Price: £129.95

Real 3D 2
Clever surface texture modelling in a class of its own.
Rating: 80%
Reviewed: 31
Supplier: Alternative Image
Price: £469

Resource
Disassembles binary to macro assembly language
Rating: 90%
Reviewed: 33
Supplier: Helios
Price: £130

Scala EE100
Semi-pro editing for LANC equipped gear
Rating: na
Reviewed: 36
Supplier: Scala UK
Price: £149

Scala MM300
Costly, all-singing, all-dancing video FX generator
Rating: 90%
Reviewed: 36
Supplier: Scala UK
Price: £329

Sculpt 4D
A genuine classic of ray-tracers.
Rating: 90%
Reviewed: 7
Supplier: Alternative Image
Price: £400

Smooth Talker
Video prompting system
Rating: 70%
Reviewed: 16
Supplier: Zen Computers
Price: £140

Spellbound
Writing for little ones
Rating: 70%
Reviewed: 6
Supplier: Lander Software
Price: £26

Spellicopter
Spelling
Rating: 70%
Reviewed: 6
Supplier: ESP Software
Price: £20

Studio
All-singing printer driver
Rating: 90%
Reviewed: 33
Supplier: JAM
Price: £49.95

Superbase Personal 2
Very powerful programmable relational database with forms
Rating: 70%
Reviewed: 9,12
Supplier: Oxxi
Price: £100

Superbase Pro 4
Very powerful programmable relational database with forms
Rating: 90%
Reviewed: 4,9
Supplier: Oxxi
Price: £400

SuperJam!
Music generation by computer
Rating: 70%
Reviewed: 15
Supplier: Blue Ribbon Sound
Price: £100

Surface Master
Another gribbly surface generator for Imagine
Rating: 70%
Reviewed: 14
Supplier: Alternative Image
Price: £28

Technosound Turbo 2
Sample editor
Rating: 70%
Reviewed: 30
Supplier: New Dimensions
Price: £39.99

Terraform
Edits landsape.DEM files for VistaPro
Rating: 70%
Reviewed: 26
Supplier: Meridian
Price: £34.99

The French Mistress
French language tutor for all
Rating: 70%
Reviewed: 4
Supplier: Kosmos
Price: £20

Touch Typist
Computer aided course in touch typing
Rating: 70%
Reviewed: 15
Supplier: Sector Software
Price: £14

TrapFAX
FAX software for high-speed modems
Rating: 80%
Reviewed: 36
Supplier: Blittersoft
Price: 74.95

Turbo Print Pro
Enhanced printing utility
Rating: 70%
Reviewed: 14,15
Supplier: Meridian
Price: £49.95

TypeSmith 2
Scalable font utility
Rating: 90%
Reviewed: 36
Supplier: Meridian
Price: £135

Upper Disk Tools
Disk recovery tools
Rating: 81%
Reviewed: 37
Supplier: Wheelbarrow Software
Price: 19.95

VistaPro
Real-world landscape generator
Rating: 90%
Reviewed: 7
Supplier: Meridian
Price: £100

VTClock
Video-type clock overlay for video use
Rating: 90%
Reviewed: 35
Supplier: Zen Computers
Price: £35.25

Wordworth 2 AGA
Greatly improved version of Wordworth (and British too)
Rating: 80%
Reviewed: 33
Supplier: Digita
Price: £129.95

Wordworth 3.0
Latest version of Digita's high-power word processor
Rating: 65%
Reviewed: 37
Supplier: Digita
Price: £149.99

Supplier's list

For information on the libraries supplying pulbic domain and shareware, check out our full listing on page 89.

Accolade	071 738 1391
ACL	0933 650677
Almathera	081 687 0040
Alternative Image	0533 440041
Amiga Centre Scotland	089 687583
Arnor	0733 68909
Blitter Soft	0908 220196
Calculus	0543 418666
Cloudhall	0604 231211
Commodore	0628 770088
Complex Computers	0706 224531
Coombe Valley	0626 779695
Digita	0395 270273
Electronic Arts	0753 549442
Entertaiment Int.	081 343 9143
ESP	0702 600557
Europress	0625 859333
Expressworks	0252 726255
Gajits	061 236 2515
Gasteiner	081 345 6000
GND	071 515 0100
Gordon Harwood	0773 836781
HiSoft	0525 718181
Indi Direct	0543 419999
Lander Software	041 357 1659
Lola Electronics	0858 880182
Marcam	0604 790466
MCM	081 963 0663
Meridian	081 543 3500
MicroIllusions	0480 496497
New Dimensions	0291 690933
Oki Printers	0753 819819
Omega Projects	0942 682206
Power Computing	0234 273000
Prisma Software	0244 362244
Real Time Associates	081 6567333
Rombo	0506 414631
Scala UK	0920 444294
SeaSoft Computing	0903 850378
Silica	081 309 1111
Siren Software	061 474 7572
Star	0494 471111
The Jumping Bean Company	0602 792838
Trilogic	0274 678062
Tripple 'R' Software	0742 780370
White Knight Technologies	0992 714539
Zen Computer Services	061 793 1931

Yur guide to safer Amiga Shopping

Getting confused in the alluring shopping jungle is easy. Amiga Shopper leads the way to a better buy.

Colourful adverts tempt you with amazing pieces of equipment and software for your Amiga. They are faster, bigger, better and you are just dying to get your hands on them. Your first step to avoid dishonest businesses (thankfully they are a small minority, but all it takes is one!) and ultimately disappointment on your behalf, is to read our Safe Shopping advice. Follow a few simple steps and the Amiga kit of your dreams will safely be yours.

BUYING IN PERSON

● Where possible, always test any software and hardware in the shop before taking it home, to make sure that everything works properly.

● Make sure you have all the necessary leads, manuals or other accessories you should have.

● Don't forget to keep your receipt.

BUYING BY PHONE

● Be as clear as possible when stating what you want to buy and make sure you confirm all the technical details. Things to bear in mind are: version numbers, memory requirements, other hardware or software required, and compatibility with your Amiga (be sure you know which version of Kickstart you have).

● Check the price you are asked to pay, and make sure that it's the same as the price advertised.

● Check that what you are ordering is actually in stock.

● Check when and how the article will be delivered, and that any extra charges are as stated on the advert.

● Make a note of the date and time when you order the product.

BUYING BY POST

● You must remember to clearly state exactly what you are buying, at what price (refer to the magazine, page and issue number where it's advertised) and give any relevant information about your system set-up that will reduce the risk of hiccups.

● Make sure you keep copies of all correspondence.

MAKING RETURNS

You are entitled to return a product if it fails to meet one of the following criteria:

❶ The goods must be of 'merchantable quality.'
❷ They must be "as described".
❸ They must be fit for the purpose for which they were sold, or for the purpose you specified when ordering.

If they fail to satisfy any or all of the criteria, then you are entitled to:

● Return them for a refund.
● Receive compensation for part of the value.
● Get a replacement or free repair.

● When returning a product, ensure you have proof of purchase and that you return the item as soon as possible after receiving it. That's why it is important to check it thoroughly as soon as it is delivered.

GETTING REPAIRS

● Always check the conditions of the guarantee, and servicing and replacement policy.

● Always fill in and return warranty cards as soon as possible, and make sure that you are aware of all the conditions in the guarantee.

BUYING PD

● Even though PD software is relatively inexpensive, you should still apply the guidelines set out above, making sure that you confirm all orders as clearly as possible.

● Shopping around is still important when buying PD because different sources charge different prices for the same disks. There is no set pricing structure for disks, but bear in mind that PD houses are meant to be non-profit-making operations. AS

Buying by Mail – Ten Steps to Safety

When you're buying from any mail order company, it's worth following *Amiga Shopper's* useful guidelines to avoid confusion and disappointment:

1.) Before you send any money, ring the supplier to make sure the item you require is in stock. Ask questions about the company's policy on delivery and returns of faulty equipment. Make sure that there are no hidden costs such as postage and packaging. Find out when you can *realistically* expect to receive your goods.

2.) Always read the small print in adverts. This is normally where the unpleasant surprises are hidden

3.) Beware companies that do not include their address on their adverts. Also, avoid companies which do not answer or return your calls.

4.) By far the best method of payment is by credit card. If ordering goods of more than £100 in total value, remember that you are legally entitled to claim compensation from some credit companies if the retailer goes bust. Check your credit card company's policy carefully. You can also try to get extra insurance in advance.

5.) If you're not paying by credit card, pay by cheque. Never send cash, and avoid using postal orders.

6.) Keep records. If you are buying by credit card keep a note of the time of the order and ask for an order number. When ordering anything over the telephone, always double-check the price.

7.) When sending a cheque keep a note of the cheque number, the date and the exact value. Make sure you know the exact name of the mail order company.

8.) When you receive your goods, check them carefully. If anything is missing or faulty, contact the supplier immediately.

9.) Always order from the most recent issue of *Amiga Shopper*.

10.) If a problem does arise, contact the supplier in the first instance. Calmly and politely tell them your problem. Most problems turn out to be minor hitches or misunderstandings that can easily be resolved. If you think you have a genuine grievance, contact your local Trading Standards Officer. The number is in the phone book.

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AMIGA SHOPPER

Issue 38 – June 1994

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It's Bloody Brilliant!

We've got ten – yep, ten! – copies of Digital Creation's superb Brilliance 2 paint package that have to go – just answer those questions.

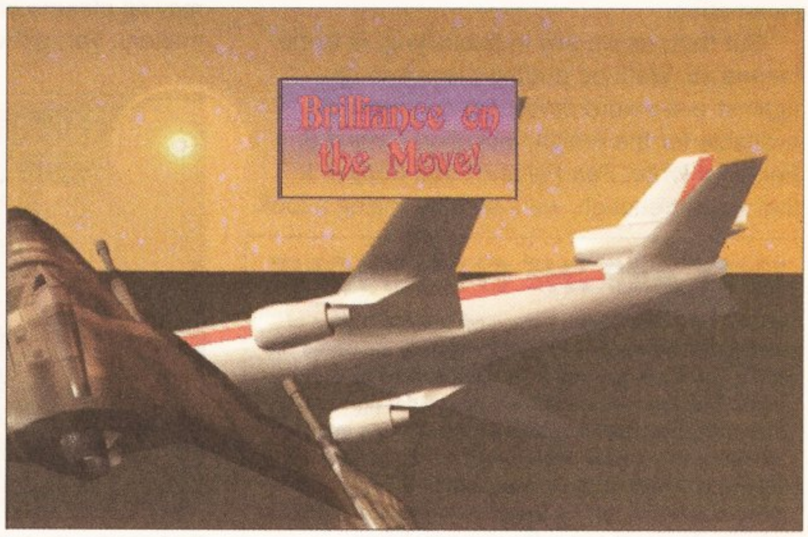
We're pretty damned pleased with ourselves here at *Amiga Shopper*. Not only have we managed to bring you an exclusive review of the just-this-minute released version 2 of *Brilliance*, but we've also, thanks to the generosity of the good folks at Digital Creations, gotten our hands on this top program to give away.

You can check out the review on page 18 for the full low-down on the package – suffice to say that our reviewer, R Shamms Mortier, reckons it's the "best in Amiga 2D painting and animation".

The procedure, as ever, is very simple: answer the three questions below, stick said answers down on a postcard or the back of a sealed envelope, along with your name and address, and send it to:

Paint Your Wagon
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Future Publishing
29 Monmouth Street
Bath
Avon BA1 2DL

Please say if you don't want your name included on a mailing list. The closing date for entries is 10 June. Only one entry per household will be accepted. The competition is not open to employees of Future Publishing or Digital Creations; and the editor's decision is final (unless his girlfriend says otherwise). AS



Now you can create your own works of digital art with Brilliance 2. Two versions are supplied with the package – one for 2, 4, 8, 16, 32, 64, 128 and 256 colour modes; the other, True Brilliance, works in AGA HAM-8 mode and 24-bit true colour.

THOSE EASY-PEASY QUESTIONS

1) What is the animation technique used in this month's animation tutorial to create the stormy clouds effect?

2) Around how much faster are the new version of *Brilliance*'s tweening operations as compared to those of *Brilliance 1.0*?

3) What method would you use with *Brilliance* to protect a wide range of colours in an image if you were working in, say, HAM-8 mode?

They really are easy questions – you'll find all the answers in the pages of this very issue. Time to get searching...

COMING ATTRACTIONS...

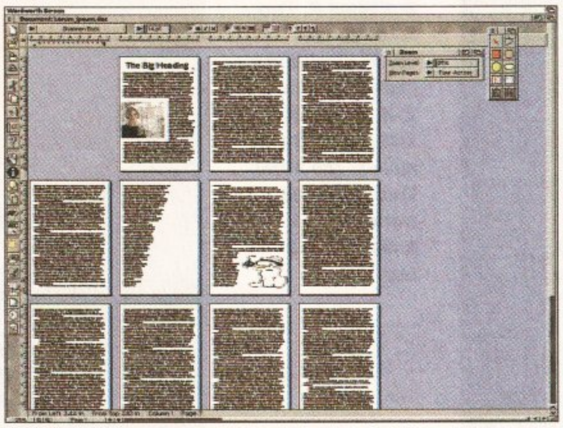
Which is the word processor for you?

An important question, we're sure you'll agree, and one that we propose to answer fully in next month's fact-filled, tip-top-tabulous issue.

We'll be looking at the updated version of *Wordworth 3*, with all those nasty little bugs ironed out, so we can give you a definitive evaluation of just how good it really is. We'd be mad not to look at *Final Writer* (and we're not mad, or so the company psychiatrist keeps on telling us), what with it now reaching its second, and no doubt much improved, incarnation.

But that, as we say in publishing, is by no means all. We'll be putting these two up against every word processor commercially available for the Amiga, including *Protext 6*, *Personal Write*, *Pen Pal* and *Final Copy II*. If that wasn't enough, we'll also be taking a look at a couple of public domain alternatives. Let's face it, there's no point in being a snob about this – if you can get something to do what you need for a cheap price, then you may as well go for it. Our in-depth, feature-by-feature comparison will ensure that you make exactly the right choice.

Next month also sees the return of *AMOS Action*, the column that shows you how to get the most from Europress Software's Amiga-orientated variant on the BASIC programming language. We'll be showing you to create those moving plasma effects so beloved to demo makers. Far, as we say in publishing, out. AS



Next month – the battle of the giants. Wordworth 3 and Final Writer go head-to-head with every wp available.

THEY ARE THE CHAMPIONS

Oh yes they are. With a commendable application of skill and judgement they've successfully answered the three questions in issue 36's *Wordworth 3* competition, and lady luck has played her part too, in selecting these lucky three from the editor's over-brimming hat: Louise Barraclough of Hull, Montgomery Biggen of Sheffield and M Longhorn of Bristol. Congratulations, folks – a copy of *Wordworth 3* will be winging its way to you in the very near future.

BE SURE TO AVOID DISAPPOINTMENT – RESERVE YOUR FAVOURITE MAGAZINE AT YOUR LOCAL NEWSAGENT NOW!

DEAR NEWSAGENT, Please reserve/deliver me a copy of *Amiga Shopper* every month, beginning with the July issue, which goes on sale on Tuesday 7 June.

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• NOTE TO NEWSAGENT: *Amiga Shopper* is published by Future Publishing (0225 442244) and is available from your local wholesaler.

• PS Oh, and if you do have any problems getting hold of your favourite Amiga mag, call Kate Elston on 0225 442244 and she'll help you out.

AT-A-GLANCE GUIDE

To help you find what you want quickly, here is a cross-referenced list of everything covered in this month's *Amiga Shopper*. You'll find a detailed index to the problem-solving *Amiga Answers* section on page 41. The page numbers given are for the first page of the article in which the subject is mentioned.

Are there any products or subjects you'd like us to take a look at? Well, just drop a line to: *Amiga Shopper*, 30 Monmouth Street, Bath, Avon BA1 2BW.

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